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No. XV. OF VOL. II., 1927. LONDON, SATURDAY, OCTOBER 8, 1927 Pp. 128—Price 1s.
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There is good evidence that man is derived from aquatic ancestors; the stages he passes through before becoming fit to be born indicate this: the fœtus in the womb lives as an aquatic parasite within its mother. When an ovum enters the uterus, the overgrown uterine decidua on which it rests secretes a fluid for its nourishment. This fluid is aptly named by Teacher, in a recent admirable research, uterine milk. The ovum can flourish in this medium about ten days. When the environment is favourable fertilisation is effected by a spermatozoon—a flagellate cell flourishing in a fluid menstruum. The ovum, in consequence of its union with the head of the spermatozoon, becomes an oösperm, or zygote, and is quickly invested with delicate membranes. Of these, the outer, known as the chorion, quickly becomes shaggy with protoplasmic bodies called chorionic villi. These villi erode the adjacent decidua and firmly embed the oösperm; they are, in due course, converted into a placenta—the respiratory organ of the fœtus. Fluid accumulates in the amnionic cavity and in due course the embryo disports itself actively as an aquatic creature in its own amnionic pool. In the early stage its skin is covered by a single layer of cells. Later this becomes double and the superficial layer is known as the epitrichium. About the eighth month of intra-uterine life the epitrichium is cast off mixed with grease from the skin-glands, and the delicate hairs known as lanugo. This soapy stuff is the vernix caseosa so conspicuous on the skin of the new-born child. The epitrichium persists on aquatic creatures such as frogs and salamanders and protects their skin from maceration. When the human fœtus, as an aquatic creature, disports itself in the amnionic hydrosphere the epitrichium and vernix caseosa protect it from maceration. Occasionally the epitrichium persists and the fœtus dies; in such circumstances when discharged from the uterus, it presents a weird appearance and is known as the Harlequin fœtus.

The human fœtus is an aquatic mammal, its blood being oxygenated by its mother's blood by means of the placenta. At birth it is expelled from the uterus; discards the placenta, and becomes a lung-breathing creature.

Few things made a deeper impression on my mind that when, as a child, I realised that the tadpoles, which emerged from the frog-spawn in the ditch bordering my playground, turned into frogs and jumped among the long grass in the paddock. It was my earliest lesson in embryology. When I became absorbed in anatomy and morphology the changes in the branchial bars, as the aquatic tadpole transforms into an air-breathing amphibian, became more interesting, especially on learning that in man their chief representatives are the delicate chain of ossicles—malleus, incus, and stapes—in the tympanic cavity. It requires little imagination to realise that "the first landmark in the ascent of man was when the frog first found voice and left the water," but true to its origin, *the frog must return to the water to spawn.*

Recently Leathes,[1] in an admirable summary, concludes that life consists in organic compounds continually reforming themselves and that the sea is the native environment originally of all forms of life. The importance of water is emphasised by the knowledge that the greater part of our bodies (two-thirds) is water.

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An ovum is propelled through the Fallopian tube in about three days. Normally the life of the ovum is spent in the cavity of the uterus, a suitable place for its reception and nourishment. When an ovum is attacked by a spermatozoon it burrows into the endometrium like a vigorous parasite. The initial effect of this invasion upon a woman is immediate arrest of menstruation; no one has suggested an explanation of this remarkable effect.

Thirty or forty days after fertilisation the oösperm has undergone some wonderful changes. It has increased enormously and become a cyst with a thin delicate transparent wall containing a visible embryo, and its outer wall is shaggy with delicate tufts known as chorionic villi. In the early stages the villi are devoid of blood-vessels; they consist of an axis of delicate connective tissue supporting cells rich in protoplasm. These cells are peculiar in character and easily recognised with the aid of a microscope by competent histologists. The chorionic villi are the chief cellular elements of the placenta. The cellular caps of the villi possess erosive powers which enable them to erode maternal tissues and blood-vessels. Chorionic villi have become the subject of intense study. A century ago it was discovered that the curious product of conception known as the grape-mole (Trauben mole) is due to changes in the chorionic villi. Examples are preserved in most pathological museums. Scientific knowledge percolates slowly; this disease remained a curiosity until Sänger and Pfeiffer, in 1889, independently described a malignant type of uterine tumour, peculiar in structure, which attacks parturient women. Subsequent investigations by many observers proved that such perversion is associated with the chorionic villi. It is now well known as an exaggeration of the eroding properties of the villi; they penetrate the walls of the uterus and may invade the peritoneal cavity. When they erode blood-vessels, fragments of the villi are deported by the blood stream to the heart, lungs, bones, viscera, and brain, giving origin to "secondary deposits" and sometimes kill the patient with astonishing speed.

Examples of the spontaneous disappearance of chorionic cancer have been reported. This betrays

[1] THE LANCET, 1926, ii., 365.

its alliance with the placenta which is a temporary organ.

The natural history of chorionic villi illustrates in a remarkable way the distinguishing features of the cancer cell; for example, its power of independent growth, erosiveness, and vitality which enable it to undergo dispersion and establish itself in parts of the body remote from its origin.

The natural history of the placenta is astonishing, but facts have been gradually accumulating which increase our astonishment.

The placenta dominates the life of the fœtus; the termination of its intra-uterine life coincides with that of the placenta, and at the end of 280 days, if the child be not expelled, the fœtal circulation stops, the babe dies, the placenta dies, and is slowly absorbed. It is significant that a ripe placenta never becomes malignant. The villi—the immature elements—are the source of chorionic cancer.

The pathologist's interest does not end here.

OVARIAN DERMOIDS.

Misdirected Embryologic Energy.

When the wonderful effects which follow the vital collision of a spermatozoon with an ovum were unravelled by embryologists, the spermatozoon seemed to be the essential factor in initiating developmental changes in the ovum. There are reasons for believing that this privilege is not peculiar to the tailed-cell. Ovarian dermoids are familiar to surgeons to-day, but 50 years ago they were regarded as curious tumours usually found after death. With the establishment of ovariotomy they were proved to be common tumours; all organs normal to a fœtus have been found in them, except the reproductive gonads. Skin with all the elements common to it, lanugo, hair, glands, and nails. Brain tissue, choroid plexus, and spinal cord. Eyes, teeth, cartilage, and bone. Trachea with mucous membrane and thyroid gland. Intestine and liver. The essential element is a skin-covered lump which often resembles a mammary gland with a nipple surrounded with an areola. Sometimes a rudely shaped head and a stunted limb. These ill-formed lumps, known as embryomas, represent an ovum which has developed without the stimulus of a spermatozoon.

Whilst pathologists were puzzled by such occurrences, Loeb induced the eggs of starfishes to segment by adding soda-water to the sea-water of an aquarium—shock fertilisation. Later, Batallion induced complete embryogenesis in the eggs of grass frogs by gently puncturing them with extremely thin metal, or glass stylets dipped in frog's blood. It is now a common experiment in biological laboratories in springtime to produce "fatherless frogs." These experiments have an important bearing on the origin of ovarian dermoids and support the opinion that they are due to the activity of ova.

The nature of ovarian dermoids has engrossed my attention for nearly 50 years. These tumours in some instances weigh nearly 50 lb. Gradually I realised that the mass of grumous stuff which often forms the greater part of the tumour is excrementitious. The embryoma, the essential part of the tumour, is skin-covered and the skin sheds epidermis, lanugo, hair, sebum, &c., hour by hour, day by day, month by month, and year by year, until the accumulated rubbish makes the tumour conspicuous.

I have often wondered at the frequent presence of skin, hair, and teeth in dermoids and pondered on the absence of intestine. How blind have I been!

A peculiarity of the cubical cells lining the gastro-intestinal canal is the large amount of colloid material which forms in them under pathological conditions. The biggest tumours which form in women are ovarian dermoids. Many years ago I urged that the membrane lining the honeycomb chambers of these huge cystic masses was mucous membrane. Gradually I became convinced that they are embryomas in which gastro-intestinal epithelium is dominant.

In ovarian dermoids skin prevails, and the accumulated rubbish—sebum, epidermis, lanugo, and teeth—is detritus from the skin.

In ovarian colloid cysts mucous membrane prevails. The accumulated stuff is pseudo-mucin furnished by the gastro-intestinal epithelium of the embryoma.

Between the extreme types there is every gradation of misdirected embryologic energy. These tumours arise in ova which develop independently of spermatozoa. When an embryoma is well organised the character of the dermoid is easily recognised and it is non-malignant. They endanger life by their bulk and septic infection to which they are liable, usually from the intestine.

Although I have spent much time in studying the minute structure of ovarian dermoids I have not detected in them any evidence of testicular tissue or chorionic villi. In 1902 Schangenhaufer discovered in a testicular dermoid tissue identical with chorionic villi. His observations have been confirmed by other histologists. In some instances the tissue closely resembles that of the grape-mole.

It is worth mention that among the peculiar tumours which occur in the ovaries of adult women, known as papillomatous cysts, there is a variety in which the microscopic structure is like that of chorionic cancer. This variety is malignant and is disseminated by the blood stream. The secondary tumours erode bone with facility. In one example under my observation the secondary growths occurred in the superior mediastinum, and bud-like processes eroded the manubrium of the sternum, and appeared as currant-like nodules under the skin.

Papillomatous cysts of the ovaries are, as a rule, bilateral and occur in women between the twenty-fifth and fiftieth years of life.

It is difficult to escape from this conclusion:

PREGNANCY IS THE EPITOME OF A PARASITE INFECTION.

The fœtus may be regarded as a tumour growing within its mother, the consequence of an infection by a parasite—the spermatozoon. It is a strange eventful history. Copulation is the method of infection by which flagellate protozoa—spermatozoa, introduced into the female—attack ripe ova in the uterine or the tubal passages, and convert one or more into oösperms (zygotes). The oösperm embeds itself vigorously in the ripe decidua. The first effects of the infection are a local reaction—the arrest of menstruation; and a constitutional response expressed by mammary activity—the secretion of milk; and usually pigmentation of the skin localised to certain definite situations. The uterus, in a marvellous manner, adjusts itself to the growth of the fœtal tumour, and at the end of 280 days the death of the placenta coincides with labour and the expulsion of the fœtus and its membranes. The fœtus discards the placenta and becomes an air-breathing mammal, leads an independent life, becomes in due course mature, and seeks opportunities for reproducing its kind.

Pathological changes sometimes arise in connexion with the accessory structures, especially the chorionic villi and the placenta, which jeopardise the successful development of the embryo and the life of its mother. We know in relation with ovarian and testicular dermoids that the more complete the development of the embryo the less harmful are the consequences to the mother; but when the development is perverted and the tissues nondescript, the gross products are often notoriously malignant. This holds good for uterine development.

PARTURITION.

Childbirth is a natural operation, and like a surgical operation has its risks and sequences. Of these, the two most important are sepsis and cancer, one is immediate and the other deferred.

In spite of the brilliant results which ensued on the conquest of sepsis and the treatment of wounds, child-bed fever persists. It is true that endemic

puerperal fever disappeared when Listerian principles were applied, but the sporadic form persists, and will persist, until parturition is conducted on the same strict methods as surgical operations. Take, for example, Cæsarean section. In 1860 this ancient operation had an enormous mortality. To-day it is safer than normal delivery at term, since surgeons adopted aseptic methods—boiling instruments and ligature materials; and especially wearing sterilised rubber gloves when conducting labour.

In order to reduce the risks of parturition to the level of those attending surgical operations, a parturient woman should be treated on the same lines as a prospective surgical patient. *She should not be ashamed to wash the gate-of-birth with the same diligence and care as she washes her face.* Such toilet is of the utmost value as a protection against post-partem sepsis.

Chronic ulcerating septic fissures in the walls of the birth-canal are the lurking places of pathogenic germs, and potential sources of uterine infection and cancer.

Science hath given a new commandment to doctors and midwives:

> Thou shalt wear sterilised rubber-gloves in taking a labour. The Law will not hold him guiltless that taketh a labour with bare hands and the lying-in woman develops child-bed fever.

We flounder in speculation concerning the causes of tumours and cancers, as much as our predecessors floundered in ignorance of the factors concerned in animal reproduction, until the microscope enabled us to recognise mammalian ova and spermatozoa, and work out their intimate relations.

> Verily the tale of Animal Reproduction is the most wonderful history in the world.

An Address
ON
PRACTICAL ANÆSTHETICS IN CHILDREN.

Delivered at the Infants Hospital, Westminster,

BY JOSEPH BIRT, M.R.C.S. ENG.,
ANÆSTHETIST TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET, LONDON, AND TO THE INFANTS HOSPITAL, WESTMINSTER, ETC.

TWENTY-FOUR hours before operation the child's urine should be tested for albumin, sugar, and acetone. Whether the latter be present or not, teaspoonful doses of dextrose should be given, in addition to usual food, every four hours until within an hour of the operation. For old enough children sucking barley-sugar, or an equivalent, is an efficient and pleasant alternative. Status lymphaticus often cannot be diagnosed, but the anæsthetist should beware of children showing apathy and not resisting during induction, especially if they are fat and pale. Solid food should be discontinued four hours before the operation. No preliminary purgation is desirable. Atropine should be administered, either by the mouth or hypodermically—if by the mouth in two doses, one two hours and the other half an hour before operation, in the following scale of doses:—

For a child of 6 months to 1 year, in all ..	1/250 gr.
" " 1 year to 2 years, in all ..	1/150 gr.
" " 6 years and upwards, in all..	1/50 gr.

If by hypodermic injection half an hour before operation:—

From 6 months to 1 year ..	1/400 gr.
1–4 years	1/150 gr.
4–12 years	1/100 gr.

I think the hypodermic method is better as its action is more definite and is easier to time. In a few cases atropine administered orally has given rise to symptoms of poisoning which, so far as I know, have not been observed when a proper dose has been given hypodermically.

Apparatus.

Two inhaling masks should be used. I prefer Page's as they are fitted with two separate tubes, one for the gaseous anæsthetic and one for oxygen, each covered with 24 layers of single gauze. (Gauze is usually folded four times in the bought rolls, therefore six thicknesses of this will make 24 layers.) A pad of Gamgee tissue about 9 in. by 6 in., with a hole cut in the centre for the nose and mouth, should be wetted and placed over the face to protect the eyes, and this again covered with a similar-sized piece of thin indiarubber to act as an ether-proof protective. A tube of ethyl chloride, an ether bottle fitted with a dropping cork, and an ether bottle in a fixed stand with a Mennell's regulating tap should be provided, as well as a cylinder of oxygen with a fine adjustment screw, some indiarubber bellows, and two or three lengths of indiarubber tubing of a suitable size, in all about 3 yards long, a Mason's gag, and tongue forceps made much like towel-clips. The old-fashioned tongue-crushing clips should never be used. A small cylinder containing CO_2 may be found useful if respiratory amplitude should need increasing.

Ether Anæsthesia.

For an infant under 6 months ethyl chloride can be dispensed with and the gauze mask well soaked with ether and placed about 4 in. from the infant's face, gradually decreasing this distance till there is no struggling or crying. Then a wetted Gamgee shield, the indiarubber, and the mask are put in position, and the head turned well round to one side so that the tongue may fall into the cheek and saliva run out of the mouth instead of around the epiglottis and so into the larynx. I use gauze because it is absorbent and porous (as is also coarse flannel); lint is apt to balloon in expiration. The wet Gamgee pad fits the face better and does not give off fluff, which might be inhaled; the dampness also dilutes any ether that might escape on to the Gamgee, so that it is less likely to injure the eyes.

It is pleasanter for older children to start with a small dose of ethyl chloride to stop the crying and struggling that might be prolonged under ether alone. The nurse must hold the child securely (preferably above the elbows) while a gauze-covered mask is placed over the child's face after it has had about 5 or 6 c.cm. of ethyl chloride sprayed into it. Ether is dropped over the mask which the hand partly covers. When the child is asleep the gauze and indiarubber pad and the second gauze-covered mask (with plenty of ether on it) are firmly applied. This removal of the first mask takes away the stale and sickly gas left by the ethyl chloride and tends to prevent vomiting.

Readiness for operation is best shown in infants under one year by the absence of response when the skin of the abdomen is picked up with towel-clips, and in older children by freedom of the lower jaw when pulled away from the upper. The anæsthetic may then be continued by gradually dripping ether on the mask, keeping it quite wet all over and covering it with a thick extra pad of gauze or about two layers of an old soft bath towel. The ether should be dripped on the gauze of the mask beneath the extra covering, which confines the vapour and prevents evaporation and the extreme cold which it causes. The anæsthetic may very conveniently be continued from the completion of induction, for all ordinary purposes, by means of a gentle stream of oxygen passing through ether and conveyed to the patient by a tube from the Mennell's tap in the bottle to one of the conducting tubes on Page's frame-mask. The relative amount of ether and oxygen is regulated by the peculiar advantages of this tap. The oxygen (or, if preferred, air by means of bellows) passes from the other side of the tap. When the anæsthetic is being administered in this way a thoroughly fresh

supply for each patient should be insisted on, to ensure the minimum toxic effect from chemical changes. Absolutely fresh anæsthetic should be put into the bottle for each new patient. The residue can be used up for cleaning or for making ether soap. Ether and chloroform, especially in clear glass bottles, should be kept in the dark.

Hot air is not refreshing to breathe, and some surgeons believe that bronchial catarrh is more usual after using the anæsthetic warm.

Note must be taken of the quality of the pulse (rate is always much increased, often 156 or more), the breathing, the condition of the pupils and eyes generally, the colour of the lips and skin of the face, and always of the blood at the site of operation. The operation should not be commenced until the patient has passed the troublesome and even dangerous time when the reflex governing the vocal cords is sufficiently active to excite laryngeal spasm. This is especially dangerous with such a toxic agent as chloroform, which, when locked in the system by laryngeal spasm, will soon poison the vital organs of the body. Chloroform should never be used for children except in operations involving the use of an actual or electric cautery in the region of the mouth or face. It should then be delivered through a Junker and by air bellows, avoiding oxygen.

To proceed with the administration after the induction is properly completed, very little oxygen and ether will be necessary for good anæsthesia and very even and satisfactory states of the pulse and respiration. The pupils should be moderately dilated and the jaw kept loose by increasing, if necessary, the proportion of ether used.

After-treatment.

To free the patient from ether saturation at the conclusion of an operation CO_2 is sometimes used to induce voluminous and slow respiration. It is said that the patient has less taste of ether when he recovers consciousness. Some people think that the after-smell and unpleasantness of ether are neutralised by placing over the patient's face after operation a square of thick gauze soaked in household vinegar; presumably there is a chemical change which converts the unpleasant taste of ether to a pleasant one. During an operation and after it, until the patient coughs or vomits, the head should be kept on one side and low, without a pillow, to prevent the tongue falling on the epiglottis, and to allow all oral secretions to run out of the lower angle of the mouth. When the coughing or vomiting reflex is re-established, the patient will unconsciously look after himself and can be safely placed in any position desired.

Cranial Operations.

For operations involving the cranium, the neck (such as one for glands), or the region of the thyroid, it is necessary for the anæsthetist to be out of the way of the surgeon and his assistants, and this can be very satisfactorily managed, after induction is completed, in one of the following three ways.

1. An indiarubber nasal tube is passed to the back of the nasopharynx (preferably on one side only, leaving the other nostril free for expiration) and securely fastened to the face outside the nose by strapping. The main efferent tube from the ether container is attached to the nasal tube by a small junction of lead piping; lead is always preferable to glass for junctions as it does not break, is cheap, and can be bought at any plumber's shop. The main tube delivering the anæsthetic from the apparatus should be about 3 ft. long, so that the apparatus itself can stand away from the field of operation. It is important to see that the patient's end of the tube cannot slip off as it might be very difficult and inconvenient to replace in the middle of an operation. The anæsthetist must watch the bubbling in the sight-feed bottle and give proper consideration to the amount of ether being used.

2. A special airway can be passed over the tongue and secured in the mouth by strapping over it a pad of gauze partially occluding its outer end. This airway has a central tube for inspiration and the attachment of the efferent ether tube, while there is space enough around the centre tube for very free expiration and some measure of inspiration as well.

3. By the intratracheal method the anæsthetic is supplied in exactly the same way as in (2), but the tube finally delivering it is passed through the glottis. The passage of the tracheal catheter is not always easy, even in skilled hands, and as some injury may be caused by it or by the anæsthetic vapour impinging on the delicate mucous membrane, the intratracheal method should be reserved for special cases—e.g., when it is necessary to keep the lungs blown out to prevent pulmonary collapse, or in removal of tumours of the ethmoid or sphenoid regions, when the surgeon might find it necessary to divide and separate the soft or hard palates. For some purposes a combination of nitrous oxide and oxygen, with or without a small quantity of ether (derived by passing the gases either through or over the ether in the container) is very successful, especially in Rammstedt's operation. The apparatus is very heavy and therefore difficult to transport.

Boyle's apparatus is illustrated in most catalogues and is very efficient. It is desirable to have the gases in two or preferably three cylinders, rather than in one, in case of accidental leakage. There should be also an extra sight-measure bottle and an ether-containing bottle, as a failure of supply in any of these details might spell tragedy.

Each cylinder has a valve operated by a key and a fine adjustment wheel at the top to allow the quantity of gases required to be very delicately regulated. The sight-feed bottle contains two vertical tubes, the lower halves of each pierced with five small holes at regular intervals from top to bottom. To the afferent or external orifice of one tube is fixed an indiarubber tube from the oxygen and to the other a similar tube from the N_2O cylinder. Above the top holes is an air space in the bottle for mixing the gases, and up to this point cold water is poured in. The gas arriving from each cylinder bubbles through its respective tube into the water and indicates the quantity emitted in bubble units. As an ordinary rough rule it may be taken that one bubble of oxygen should be evident for four bubbles of N_2O. This mixture of gases passes into an ordinary three-way-valve gas-bag as used for dental administrations, but the bag has a central indiarubber tubing which is so arranged that any change made in the mixture of the gases is immediately conveyed close to the patient's mouth, while the residue inflates the bag.

The bag is filled and a suitable face-piece placed on the face as explained above. The child breathes with the valves in mid-position, which means inhalation of gases from the bag and expiration into the air. After a few breaths of this the ether tap is turned so that the gases pass over it, but not through it, and the valve is closed to rebreathing position. After a short time the child ceases to struggle and cry, and then the N_2O and oxygen alone are given and continued till the corneal reflexes are lost. When induction is complete the valves are returned to the midway point, as a cleaner and a better anæsthetic is thus administered than by rebreathing. In abdominal operations it is well to let more ether enter the bag when the peritoneum is about to be opened; should there be any sign of protrusion of the abdominal contents, it is well to have the wound covered up and to deliver the ether by bubbling the gases actually through it. This, however, is not usually necessary if the induction has not been hurried; in fact, it is a great help to the anæsthetist to have a quarter of an hour for induction so that it may be very gradual and cautious. One bubble of oxygen and four of N_2O in the sight-feed are usual, but must always be modified to suit each individual case.

When the operation is over the patient will soon be on his way to recovery of consciousness, and therefore in all operations (especially orthopædic procedures involving after-pain) he should have an adequate sedative, either morphia (hypodermically or orally) or aspirin and glucose by the rectum; the latter, however, does not act quickly enough after gas and oxygen. If the lips are anæmic they should be rubbed briskly

with a soft towel and a teaspoonful of brandy gently trickled between the lower lip and gum, or the finger may be wetted with brandy and placed in his mouth; no matter how young the patient is he is usually quickly refreshed. All the above anæsthetics can be continued after the requisite induction from a large gas and oxygen and ether apparatus, containing big cylinders and sufficiently capacious measuring and ether-containing bottles, such as is now installed at Great Ormond-street Hospital. Intratracheal work can also be done from it without separate motors and other complications. This apparatus has an extra cylinder containing CO_2 attached to the stand, with a special tap for running it in with the other gases if the CO_2 of the blood is considered subnormal, but this must be done with great care to avoid CO_2 poisoning. A gauge is fitted to this stand for measuring intratracheal pressures.

For intratracheal work a railroad catheter with the hole at the end should be used. The child's body and head lie quite flat and supine during induction. A special larnygoscope with the light fixed in its distal end is passed over the tongue to the epiglottis, tilted forward, and pushed to the aperture of the glottis; the catheter is then passed without force, and the ether vapour tube attached. The gauge register should be at 0 on inspiration and at 10 to 15 mm. during expiration. The catheter sizes are roughly as follows: No. 12 for a child of 12; No. 9 for a child of 6; No. 5 for babies. In extensive operations on the chest, when both pleuræ are opened, a pressure of about 50 mm. must be maintained to prevent pulmonary collapse.

Nitrous Oxide and Ethyl Chloride.

N_2O alone is not a satisfactory anæsthetic for children. Induction tends to be very quick, occasionally with much jactitation, and the return to consciousness is too rapid. The addition of a small proportion of oxygen, as explained before, meets this inconvenience quite adequately in all cases except when the mouth is the operation area. If the operation is to be a prolonged one ether vapour will be necessary, but where teeth are to be extracted or tonsils removed by the guillotine ethyl chloride should be used and is best administered by the closed-bag method, provided the anæsthetist has had a proper course of practical training in the necessary details of technique. Ethyl chloride should, however, not be administered either by the open or closed method until thorough practical experience has been obtained. Where the mouth or face is the site of operation, the ether vapour must be conveyed to the angle of the mouth by a bent lead tube attached to the indiarubber conducting tube, or a nasal catheter passed into one nostril and likewise attached to the conduction tube. At the completion of all operations it is well to put a little castor-oil into the eyes to prevent soreness of the conjunctiva. Even if the anæsthetic does not actually drop or creep into the eyes the atropine diminishes the flow of tears and thus leaves the conjunctiva very sensitive.

Accidents.

Accidents during anæsthetics are so rare and unexpected that it is important to have fixed in one's mind the best and first things to do under such circumstances.

Respiration may stop for a considerable time so long as the heart is actually pumping, but the limit allowable for real cardiac failure must not be more than seven minutes. It is best, therefore, to regard the situation as one of cardiac failure immediately untoward signs or symptoms appear. The child should be inverted or nearly turned upside down by tilting down the head of the operation table, the head should be hyperextended, the tongue drawn out, or the epiglottis pulled forward by a finger in the mouth, and oxygen driven in fairly forcibly through the nose or mouth. At the same time someone should perform external heart stimulation by a forcible and fairly quick intermittent pushing up under the left ribs of the contents of the abdomen. A nurse should inject 2 or 3 gr. of camphor in oil subcutaneously or intramuscularly. Artificial respiration can be conducted by another assistant, and the moment the heart responds it will be further stimulated by the presence of oxygen in the lungs and blood. If these measures fail the surgeon will open the abdomen and massage the heart immediately through the diaphragm. The first thing and most essential point is to arouse the dormant heart through the left abdominal wall.

Tests for Acetone.—Sodium-nitro-prusside test. To one inch of urine add two or three drops of caustic soda, then 1 per cent. solution sodium-nitro-prusside drop by drop = ruby red colour, add acetic acid; if acetone be present colour equals deep port wine.

Treatment for Acidosis.—Warmed 2 per cent. glucose sterile solutions under the skin or into a vein, or if by the rectum 15 per cent. solutions.

A CASE OF
VIRILISM DUE TO AN ADRENAL CORTICAL HYPERNEPHROMA:
RECOVERY AFTER REMOVAL OF GROWTH.

BY C. G. MURRAY, M.D. EDIN.,
AND
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With a Pathological Report by Dr. HUMPHREY GLEAVE *and Remarks by* Prof. ARTHUR HALL.

UP to 1925, when Gordon Holmes [1] published his case of virilism in which an adrenal growth was successfully removed by Sargent, in only two other cases had a similar operation been successful The earliest of these cases was J. K. Thornton's,[2] in which recovery was complete, but there was an intraperitoneal recurrence two years later. The other by Collett,[3] of Christiania, published in 1923, was in a child. We have been able to find records of only two more cases since 1925. In the case described by Fawcett, Hadfield, and Phillips [4] the patient was a woman of 70 in whom intestinal obstruction was caused by a very large tumour arising from congenital bilateral hyperplasia of the suprarenal cortex. There were "abnormalities in sexual character of the hormonic pseudohermaphroditic type." The operation was merely one of urgency, and the patient died on the next day. Feinblatt's [5] case was a woman aged 32. The history was somewhat similar to that in the case recorded in this paper. She began with pains in the right lumbar region which kept recurring for some weeks, then disappeared, to be followed about three months later by the changes in secondary characters typical of adrenal cortical growth. In this case, however, there was marked wasting and rapidly progressing weakness, and death occurred from exhaustion in about seven months from the first onset. The tumour was found to be a carcinoma of the cortex of the right adrenal gland with extension by way of the vena cava, but without metastasis. No operation was performed.

History of the Present Case.

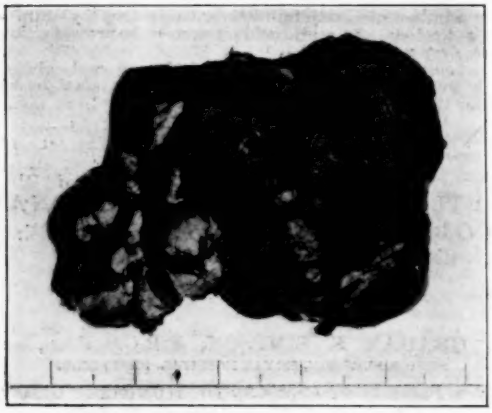
The following is the history of the case:

A single woman, aged 36, whose previous health had been quite good, began to have attacks of severe abdominal pain two or three years ago. They recurred at intervals of a few weeks, and were accompanied by anorexia. These have recently become less troublesome and gradually disappeared.

In May, 1926, she missed a period. There had never been any irregularity of the menses before. They had always occurred at intervals of exactly 28 days. During the summer of 1926 she also noticed that she was changing in several respects. She increased in weight. The hands and feet were getting larger, the hair of the scalp was beginning to fall off quite considerably, the skin of the face was becoming more coarse, and a strong hairy growth appeared on the face, chin, and lips. She also began to lose interest in things, and became irritable and depressed.

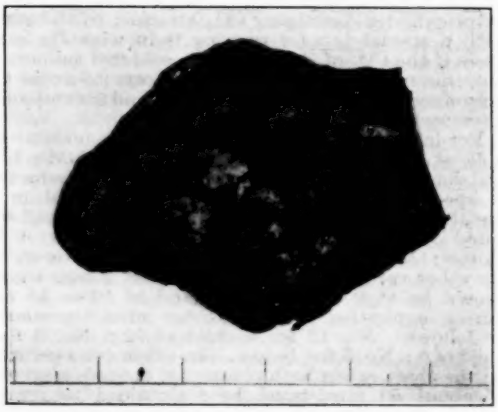
As the menses had not reappeared she consulted a gynæcologist in September, 1926. A pelvic examination was made, but nothing was found definitely abnormal. The uterus and ovaries were small. There was no marked enlargement of the clitoris. During the examination, however, a swelling was found deep in the right loin, which was suspected to be renal. In November, 1926, whilst staying in London, she consulted Dr. H. W. Barber about the hypertrichosis of the face, which was becoming more unsightly. He recognised the condition as one of early virilism, and suggested that the tumour which had been felt in the right side of the abdomen was a hypernephroma, causing the symptoms. He also called attention to the high blood pressure (200 systolic, 120 diastolic) present when he saw her.

FIG. 1.



Naked-eye photograph of larger tumour.

FIG. 2.



Naked-eye photograph of smaller tumour.

She returned home, and her condition on Nov. 12th was as follows. The general appearance had become gross and unsightly, the features florid and bloated. The cheeks, lips, chin, and neck showed a growth of dark bristly hair. The hair of the head had fallen off from the crown and temples, giving the baldness characteristic of a middle-aged man, the breasts had shrunk, and there was a suggestion of the male type of figure, apart from the legs. The hands and feet were definitely enlarged. There were also definite temperamental changes noticeable to herself as well as to those around her. From being a placid and comfortable person she had become irritable and depressed. She complained that she had lost all interest in life, that all her previous emotions and affections had disappeared. Her clothes and her personal appearance no longer afforded her any pleasure. She also stated on inquiry that the opposite sex had ceased to have any attraction for her; in fact, that men's society had become somewhat distasteful to her. This, however, did not seem to be a prominent symptom, and she thought it was only part of her loss of general interest in everything. On physical examination, in addition to the characteristics of virilism mentioned above, a definite tumour was felt deeply in the right loin. It was firm, rounded, and slightly tender on pressure.

The pulse-rate, which had been 110, fell to 80 after a two weeks' rest in bed. The blood pressure was still high, usually about 200 systolic and 120 diastolic. The cardiac impulse was considerably displaced outwards and definitely heaving in character. When the patient was up there was some œdema of the right leg only. Nothing abnormal was found in any other system. The urine contained neither albumin nor sugar.

Operation.

After a consultation with Prof. Arthur Hall on Nov. 12th, operation was decided upon.

As a preliminary to this a cystoscopic examination was made by one of us (G. S. S.) to determine the condition of the right kidney. The bladder and ureters were normal. Blue was seen coming from the left ureter, but whether from the right or not remained uncertain.

On Nov. 16th, therefore, after anæsthetisation, a confirmatory cystoscopic examination was done, which showed that blue came also from the right kidney, but to a somewhat less extent than from the left. The major operation was therefore proceeded with (G. S. S.). An oblique incision was made in the right lumbar region and part of the right twelfth rib removed. A tumour was seen about the size of two fists. It was covered by large veins. The kidney was pushed down, but not adherent to it, and appeared to be normal. The tumour consisted of two parts closely in contact, but apparently not structurally joined. The more superficial part was first removed without much difficulty. The deeper situated portion, however, which was about the same size, was in contact with the arch of the diaphragm and closely adherent to surrounding parts. On completing there was a considerable gush of venous blood from a vein torn off the inferior vena cava. It was also found that a small hole had been made in the right pleura. This was sutured.

Progress.

During the first few hours after operation her condition gave rise to some anxiety. The pulse-rate, which had been 104 before operation, rose to 132 and reached 148 during the next 24 hours. Temp., 101·5° F. Pituitrin was given repeatedly. The blood pressure on the day after operation had fallen to 120 systolic, rising to 130 after pituitrin. The condition remained somewhat critical during the first week. The temperature varied from 98·6° to 100°, the pulse-rate being 108 to 116. The systolic blood pressure was 130. The urine was rather above normal in amount and contained albumin. At the beginning of the second week there was a rise of temperature for three or four days. The pulse-rate again reached 148. After this the temperature fell to 98·6°–100° each day. The blood pressure remained steadily at 130 systolic.

About the end of the third week she had an attack of cystitis with frequency and pain. This subsided in a few days, and after that improvement, though slow, was steady. The temperature became normal. Blood pressure, 125 systolic. The pulse, however, remained rather frequent—116–120. In the first week of January, 1927, she was able to return home. The pulse-rate had fallen to 100.

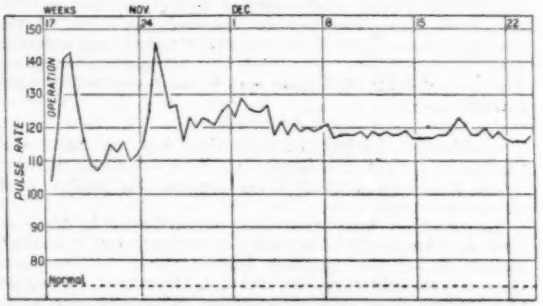


Chart showing pulse-rate after operation.

During the latter part of her stay in the nursing home definite changes occurred in the skin of the face. There was considerable exfoliation and scaling, and the hirsuties became less marked. The scalp hair began to grow again.

Pathological Report by Dr. HUMPHREY H. GLEAVE.

The specimen on removal was sent to the Pathological Department of Sheffield University, and the following report has been received from Dr. Humphrey Gleave, lecturer in pathology:—

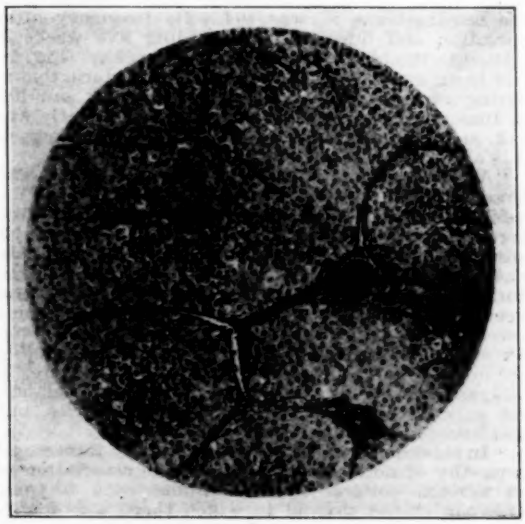
"The specimen received in Kaiserling solution on Nov. 18th, 1926, consists of two irregularly bossed masses of tissue, the larger (Fig. 1) measuring approximately 14·1 × 8·7 × 7·6 cm. and the smaller (Fig. 2) 12·1 × 7·3 × 6·9 cm. The former weighed in the wet state 464 g. and the latter 359 g. A portion of suprarenal gland was found adhering to one pole of the smaller mass. On section the two masses are found to consist of firm grey-white tumour tissue, divided irregularly by grey fibrous tissue strands, and showing numerous opaque yellowish patches of necrosis and areas of congestion.

"*Microscopical Examination.*—Large mass: the tumour consists of cells which are separated into columns and masses in a rather regular manner by capillary blood-vessels and sinusoids. The general arrangement resembles the zona fasciculata of the suprarenal, though the cell columns are frequently 10 or 20 cells in diameter. The blood-vessels separating the columns show a layer of endothelium supported by fine collagen fibres, with here and there a larger amount of fibrous tissue. A few collagen fibres also pass into the cell columns. The cells composing the tumour are fairly regular, polyhedral, measuring 13 to 24μ in diameter, with a large nucleus rich in chromatin occupying the greater part of the cell. The cytoplasm is finely granular, taking the pink eosin stain somewhat after the fashion of a liver cell. In numerous areas the cells contain clearer cytoplasm and vacuoles, but this appearance is probably due to degeneration, as it usually occurs at an area farthest away from a blood-vessel, and is sometimes accompanied by nuclear pyknosis. Multinucleated cells are scanty. Large areas of the growth show simple coagulative necrosis. There is very little hæmorrhage into the tissue. At the margin the tumour is bounded by a thick fibrous capsule, but in the midst of the capsule are seen a few groups of tumour cells.

"Smaller mass: Essentially the above description applies also to this tissue, but there are numerous areas in which the cells show more anaplasia. The trabecular arrangement is much less regular. There is considerable variation in the size and shape of the cells; in some areas they are oval. Multinucleated cells and hyperchromatic nuclei are fairly numerous. No chromaffin tissue could be demonstrated in either piece. Frozen sections of the formalin-fixed material were examined in polarised light. A small amount of lipoid is present in the tumour tissue, but practically none in comparison with the normal adrenal cortex.

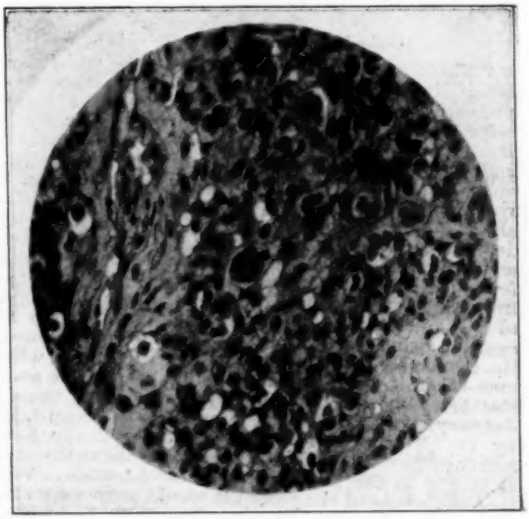
"The tumour is evidently an 'adrenal hypernephroma.'[5] Rolleston[6] suggests 'adrenal cortical hypernephroma' as the best designation for this well-recognised group of tumours. They arise from the cells of the adrenal cortex and are clearly distinguished from the paragangliomas and neuroblastomas arising from the medulla. Such tumours may be of all grades of malignancy. In Gordon Holmes's[1] case the symptoms dated from at least five years before the operation, and the patient was alive and well nine years later. The section showed a benign tumour (Prof. E. Glynn). In Glynn and Hewetson's[7] case there was amenorrhœa of 16 years' duration and hypertrichosis of four or five years' duration: the adrenal growth, weighing 12 lb., was encapsuled, and there were no secondary deposits. On the other hand, in Feinblatt's[8] case the total duration from the onset of pain followed by hypertrichosis to death was only eight months, and pieces of growth were present in the vena cava and right ventricle. There is also the possibility of a benign tumour becoming malignant, as seems probable in French's[4] case. The tumours which more closely resemble adrenal cortex are the more benign. Through the kindness of Prof. Glynn I have had an opportunity of comparing the sections from this case with those of five other cases of adrenal hypernephroma which he allowed me to examine.

FIG. 3.



Low-power magnification of the large tumour mass (Fig. 1). Fairly regular cell columns are separated from each other by vascular sinuses and fibrous tissue.

FIG. 4.



High-power magnification shows an area of cellular anaplasia with much irregularity of cells and nuclei.

The sections show that the six tumours are all of the same variety. In histological detail the present case, although apparently more active, corresponds most closely with that in Glynn and Hewetson's[7] case. Though much of it has a benign aspect there are areas of cellular anaplasia with mitoses and multinucleated cells. The majority of adrenal hypernephromas show these features even when the tumours are still localised. According to Glynn,[5] in these tumours, on the whole, growth takes place more slowly than in most malignant tumours. The prognosis is therefore rather better than in most malignant tumours, as even those which appear histologically malignant may remain localised for a considerable time."

Further History of the Case.

Since leaving the nursing-home the patient has made steady though necessarily slow progress. Just before operation in November, 1926, she weighed 10 st. 5 lb., whilst in May, 1927, she only weighed 8 st. 3 lb. She says that during the months she was ill her appetite increased greatly, so that she was always longing for the next meal and never seemed satisfied. This has

entirely disappeared since the operation, and her appetite is now normal. She has begun to take an interest in her house and clothes, and although still somewhat lacking in energy feels much more like her former self. She drives her car alone. As regards her personal appearance the change is striking. The hirsuties has disappeared, the features have returned to what they were before the illness. The hair of the head has begun to grow again. The hands have returned to their previous dimensions, and there is a general return to the feminine softness which was quite lost before operation. It is unfortunate that no photograph of her condition at the height of the illness was obtained.

The menses reappeared in January and have recurred with perfect regularity ever since. An interesting point in connexion with this is that their recurrence was at exactly the time at which they would have occurred had she never missed a period. As was stated in the history of the case, the menses had always been absolutely punctual, the interval being exactly 28 days (four weeks). The last period, before they ceased, began on May 22nd, 1926, and their first reappearance was on Jan. 31st, 1927. A simple calculation will show that this date is exactly 36 weeks to the day from May 22nd. The pulse-rate remains slightly above normal, and the blood pressure, though, as a rule, only about 130, is still very easily raised to 190–200 on slight excitement.

Remarks by Prof. ARTHUR HALL.

"There are two features in this case which seem especially to call for comment—the high blood pressure and the frequent pulse. As the history records, the blood pressure, when first taken by Dr. H. W. Barber, early in November, 1926, was very high. For how long this high pressure had existed is unknown. It remained constantly about 200 mm. Hg systolic and 120 diastolic up to the time of operation, about a fortnight later. At that time also there was definite displacement of the cardiac impulse outwards, and this was of a heaving character. During the first few days after operation the patient was so ill that frequent investigations of the blood pressure were out of the question, but it fell on the first day to 120 systolic, rising to 130 after pituitrin was given. During the remainder of her stay in the nursing-home, whenever taken it was constantly found somewhere about this level—i.e., 130 systolic. Since leaving there in January, 1927, whenever the pressure has been taken by Dr. Murray amid the patient's ordinary home surroundings, it has been found to be about the same as it was in the early weeks after operation. Were that the whole of the record it would seem very clear that the high blood pressure was caused by the presence of the tumour alone. This view must, however, be somewhat modified. She was brought to see me in May, 1927, and I found that when, early in our interview, the pressure was taken, it was about 190 systolic. I waited until the end of the consultation so that any possible initial excitement might have settled down, and found that it was then much lower—about 140 systolic. It is evident, therefore, that although not constantly high it is easily raised, possibly by excitement.

"I saw her again on June 15th and proceeded in the same way. This time it was 170 systolic when she arrived, whilst at the close of the interview it was 200. She had driven her car a distance of three miles, but did not appear at all nervous or excited. The cardiac impulse was in the fifth left space in the nipple line and distinctly heaving.

"It is thus evident that whatever part the cortical hypernephroma may have played in bringing about the rise of blood pressure, this has not as yet returned to a steady normal level with the removal of the growth. Nor is it easy to see why a tumour apparently limited to cortical substance should have any effect in raising the blood pressure—a function of the medullary portion. So far as records of other similar cases go there is but scanty information as to blood pressure to help us. Some of these cases were published before the days of blood-pressure records. Amongst the more recent cases I cannot find any reference to blood pressure in Gordon Holmes's [1] case, either before or after operation'; whilst in Feinblatt's [6] case, so far from being raised, it was below normal (110 systolic, 75 diastolic). In cases of adrenal medullary tumours a high blood pressure has been recorded, but by no means constantly. Many of the older records do not refer to the blood pressure at all, so that the number upon which to base an opinion is rather small. Rolleston [4] refers to one case in which a high blood pressure was definitely present, and mentions four other cases in which it was at least suggestive, but lacking in complete proof. On the other hand, Frew [2] records two cases in which it was not raised.

"Rolleston [4] sums up the situation as follows: 'The interesting question whether or not tumours of the medulla often provide an excess of normal or altered adrenin cannot yet be regarded as settled . . . there is not sufficient evidence to justify the tempting conclusion that hyperadrenalism analogous to hyperthyroidism exists.' On the other hand, in the present case, there has been also a change in the pulse frequency. She is quite sure that prior to this illness her pulse was always about 80 per minute. In November, 1926, however, before taking to bed, it was 110. After two weeks in bed, before operation, it had again fallen to 80. Immediately before operation in the nursing-home it was 104. Its frequency after operation and during the succeeding five weeks is related in the history and shown in the chart (Fig. 5). Nor has it ever returned to a normal rate since, that is during more than six months. When I last saw her in June, 1927, the pulse-rate when sitting quietly was 112, and she tells me that when she takes it herself it is always 100 to 106.

"We have, therefore, these two sets of facts: The blood pressure was very high shortly before operation—fell to normal immediately after operation—is often normal now, six months later, but easily goes up to its previous height from trivial causes. The pulse-rate was normal before her illness—was raised to 100–110 during her illness—was still further raised for several weeks after the operation, and has not yet become lower than it was in the weeks before operation, even six months afterwards, although she is now leading her ordinary life. It seems as though there were, in this case, some gross disturbance of endocrine balance, not only between the adrenals and the ovaries, but also between the adrenals and the thyroid.

"In this connexion a case referred to by Rolleston [4] is worthy of notice. He mentions the association of an adrenal cortical hypernephroma with a toxic adenoma of the thyroid in which there was a high blood pressure at times. This reference is to a case recorded by Keyser and Walters [3]:—

> A woman, aged 37, the mother of ten children, has not menstruated since the last pregnancy ten years before. For two years she had noticed an enlargement of the thyroid gland, together with some nervousness, occasional tremor, and some palpitation. There was also increased sweating and dyspnœa on slight exertion. Her appetite increased and she had put on 30 lb. in weight, but in spite of this became weaker. For 18 months some changes had been noticed in the skin, and considerable hypertrichosis of the face was present, so that she had to shave. The trunk and limbs were also affected. A diffuse alopecia of the scalp was present. Some albumin and sugar were found in the urine. For a year there had been aching in the back. When seen in February, 1923, there was an adenoma in the thyroid and a large rounded swelling on the left side of the abdomen under the costal margin. This was removed on Feb. 28th and found to be a 'malignant suprarenal hypernephroma.'

"The patient only survived operation four days. In this case before operation the blood pressure varied from 124 to 180 systolic, and from 90 to 110 diastolic, whilst the pulse-rate varied from 100 to 130. After operation the pulse-rate increased in frequency and the systolic blood pressure is described as being 'low and indeterminate' up to the end.

"Although the present case, unlike that of Keyser and Walters, has no obvious change in the thyroid

gland, yet as regards blood pressure and pulse-rate there is a certain resemblance between the two cases. Possibly the persistence of the pulse frequency at the level about the same as before operation, and the tendency to a rise of blood pressure on slight disturbance, may mean that there are some further remains of hypernephromatous tissue still present, insufficient to cause a constant high blood pressure, but enough to keep up the thyroid over-activity."

In recording this case the authors' thanks are due to Dr. H. W. Barber for first diagnosing the condition, to Dr. H. H. Gleave for the pathological report and microphotographs, and to Prof. Arthur Hall, for much assistance and advice throughout.

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A CASE OF
SUPRARENAL HYPERNEPHROMA.

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AND
W. A. LISTER, M.B. CAMB., M.R.C.P. LOND.,
ASSISTANT PHYSICIAN TO THE HOSPITAL.

SINCE Bulloch and Sequeira (1905) published their classical paper this remarkable condition has become widely recognised. It is hoped, however, that the following case will prove of sufficient interest to warrant its being placed on record.

History.

A girl, aged 13¼, was admitted to the South Devon and East Cornwall Hospital on June 24th, 1927. Her mother stated that, though she had always been a plump girl, obesity had been increasing rapidly during the last six months. In February, 1927, she had fallen off a bench at school and hurt her back. Since that time she had complained of pain in the back and slowly progressing weakness of the legs, so that in June she could only get about with great difficulty. During the same period the external genitals had rapidly increased in size, but menstruation had not begun. In other respects she was a healthy child and had made satisfactory progress at school. At no time had she suffered any severe illness.

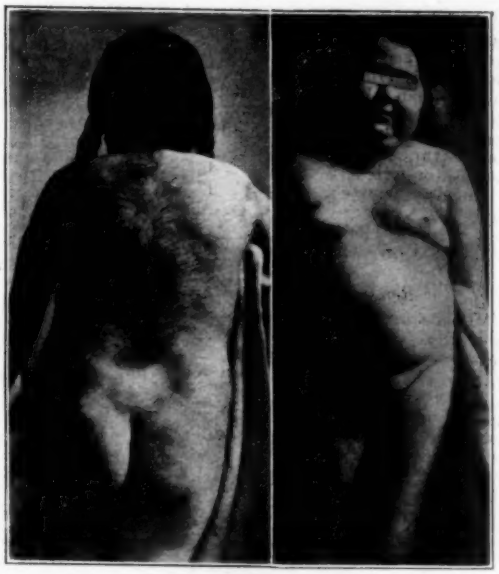
The patient was the second of four children born to the mother's second husband, who died of tuberculosis of the lungs. The other three children were alive and well. The mother's first husband was killed in an accident and her two sons by him died at about 24 years of age, one of fever in Canada and the other of (?) epilepsy.

Clinical Examination.

On examination the patient presented a remarkable appearance. She was 4 ft. 6 in. in height and weighed 6 st. 12 lb. Her face was that of a stout little old woman with very high colour and a scanty growth of fine black hair on the upper lip. The thyroid gland was not palpable and the hands and fingers were fine and tapering. Over the neck, trunk, and buttocks the subcutaneous fat was greatly increased, but no supraclavicular pads were present. The skin, which was not abnormally dry, showed a slight general pigmentation and numerous purple striæ atrophicæ over the hips, buttocks, and lower abdomen. Over the shoulders and down the back was a moderately thick growth of black hair up to one inch in length and most abundant in the interscapular region. The pubic hair was much in excess of the normal for the patient's age and presented a horizontal upper margin. The labiæ also were abnormally developed, but the clitoris was not hypertrophied to a disproportionate degree.

As compared with the trunk the limbs appeared rather thin, though in fact there was a normal amount of subcutaneous fat present. Both quadriceps extensor muscles were slightly wasted and there was weakness of extension of the knees. Both knee-jerks were absent. Movements of the ankles were strong, the ankle-jerks were present, and the plantar responses flexor in type. The abdominal reflexes were present, but rather sluggish in the lower segments. No loss of sensation of any type could be detected, nor was any other abnormality found in the central nervous system. The heart and lungs were free from signs of disease. In the left hypochondrium an irregularly rounded tumour the size of a fœtal head could be palpated, passing back into the loin and upward beneath the costal margin, but not in close apposition to it. The mass did not seem to be firmly fixed, and it moved slightly on respiration. On percussion a resonant note was obtained over the tumour. The liver and spleen were not palpable and nothing abnormal was felt per rectum.

FIG. 1.



Back and front view of patient, showing alteration in figure and facies.

The temperature was normal and the pulse-rate varied between 80 and 100. On admission a trace of sugar was said to have been found in the urine, but this was never detected on subsequent occasions, nor was any other abnormality found in it. On June 24th a blood-count gave the following results: red cells, 5,100,000; hæmoglobin, 88 per cent.; total leucocytes, 14,800, of which 67 per cent. were neutrophils and 33 per cent. lymphocytes.

A diagnosis of tumour of the left suprarenal cortex was made, but it was feared that the absence of knee-jerks and weakness of the quadriceps extensor muscles was due to metastases involving the lumbar plexus. However, a radiogram showed no signs of disease of the spine and a film of the chest showed no metastases in this position. The question of operation for removal of the tumour therefore arose, but a perusal of the literature was not encouraging. Records of only four cases of successful removal of such tumours could be found—namely, those of Knowsley Thornton, Collett, and Bovin (quoted by Gordon Holmes, 1924) and except for Collett's case these were in much older patients. In THE LANCET of July 9th there was a note that another successful case had been reported at a meeting of the Pathological Society of Great Britain on July 1st by Gleave and Wilson, the patient being a woman of 36 years.*

As the prognosis without operation was hopeless it was decided that the risk was justifiable, and on

* This is the case described by Dr. Murray and Mr. Simpson in our present issue.—ED. L.

July 12th the tumour was removed through a left lumbar incision under general anæsthesia. It was found to be covered by a thin fibrous capsule and was easily separated from the surrounding structures except at one point on its postero-internal aspect, where the capsule was deficient and the tumour somewhat adherent. On inspecting the cavity from which the tumour had been removed its relationship to the left kidney, spleen, pancreas, and colon were clearly demonstrated. Few vessels required ligature and none of these were of any size. The patient stood the operation well and her condition remained good for ten hours. Her pulse then suddenly became very rapid and weak and she died 36 hours after the operation.

At *autopsy* there was found to be moderate bruising and slight extravasation of blood into the left half of the pancreas, lower half of the spleen, upper pole of the left kidney, and the cellular tissue around the solar plexus. No sign of the left

FIG. 2.

Section of hypernephroma. (× 30.)

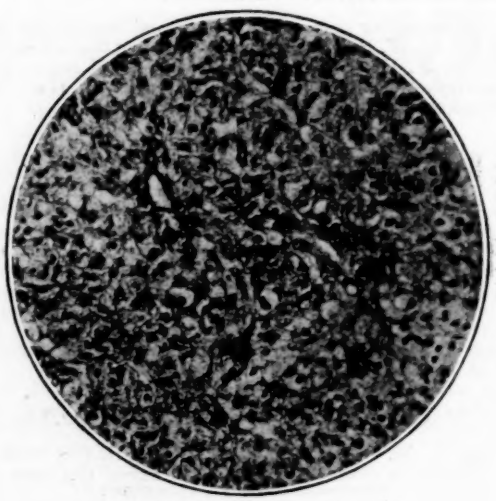
adrenal body or of any tumour substance in the neighbourhood was found. The right adrenal body was only found with some difficulty. It measured 2·5 × 1·5 × 0·2 cm. On section the cortex was represented by a row of pinhead yellow nodules and the medulla by a small amount of grey material. The uterus was infantile and measured 4·3 cm. in length and the ovaries were smooth, firm, yellow bodies measuring 1·25 × 0·5 cm. with no superficial follicles or signs of activity. In the apex of the right lower lobe of the lung beneath the visceral pleura was a metastasis from the tumour the size of a pea. No other metastasis was found. The kidneys, liver, and myocardium showed slight parenchymatous degeneration and the lungs were œdematous and congested at the bases. It was not possible to examine the central nervous system and no cause for the absence of knee-jerks was found. The lumbar plexus was normal on both sides.

The tumour measured 8½ × 5 × 2¾ in., weighed 3 lb. 13 oz., and was roughly kidney-shaped. Its colour was grey, and except at one point where the covering was deficient it was surrounded by a thin capsule in which ran numerous small blood-vessels. The surface was lobular. On section the tumour was seen to be composed of a number of rounded masses equalling a large walnut in size and mottled grey and yellow in colour. It was freely supplied with blood from vessels running in loose fibrous septa arising from the capsule and separating the individual tumour masses from one another. At no point was any sign of degeneration to be seen.

Microscopically the tumour was seen to be composed of polygonal cells varying in size, but the majority very large. They presented a well-defined cell outline and very vacuolated, foamy, or spongy protoplasm, and round or oval deeply-stained nuclei. These cells were divided into groups of varying size by thin fibrous septa containing very thin-walled blood-vessels. There were also a few larger vessels with muscular walls in the sections. Multinucleated giant cells were few.

The secondary deposit in the lung presented a well-defined border. The tumour cells resembled those of the primary growth, but were not so vacuolated, and numerous multinucleated giant cells were present. The cells were divided into groups of uniform size by very delicate fibrous septa containing thin-walled blood-vessels distended with blood. The right suprarenal body showed all the normal types of

FIG. 3.



Section of hypernephroma. (× 200.)

cell found in this organ, but the columnar arrangement in the cortex was indistinct and irregular. The ovary showed a stroma rich in spindle-cells containing very numerous Graafian follicles each of which consisted of an ovum enclosed in a theca of a single row of cells. The section also showed a larger follicle with a multicellular theca and a very large cystic follicle with discus proligerus.

Summaries of the literature relating to this condition have been made by Bulloch and Sequeira, Glynn, and

FIG. 4.

Cortex of right adrenal gland. (× 30.)

Gordon Holmes, and there is no need to recapitulate them here. It may, however, be pointed out that in cases of this type the opposite suprarenal not uncommonly appears to be poorly developed. This was so in the present case, and in that published by Hijmans (1915), in which the patient died shortly after operation, the opposite suprarenal was described

as very pale, pale yellow, and narrow (zeer bleek, bleek-geel, smal). Again, Glynn and Fordyce exhibited a similar case in a boy aged 2 in which the opposite suprarenal was atrophied at the meeting of the Pathological Society already referred to.

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A SMALL OUTBREAK OF ERYTHEMA NODOSUM.

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Erythema nodosum is once more attracting attention, and there prevails again a tendency to isolate it as a disease sui generis and to relabel it, as did Lendon, "nodal fever." [1] Accounts of definite outbreaks suggesting the specific infectious character of the condition are not abundant, and I therefore record this small epidemic.

The five cases here related occurred almost simultaneously; all were drawn from the same London district, and all were detained in St. Marylebone Hospital at almost the same time. In the first two cases there is evidence of direct contact. The outbreak occurred during the prevalence of an epidemic of so-called influenza in the early months of this year. In every case except one the condition was, in the first instance, diagnosed as acute tonsillitis if a gross throat lesion were present, or as influenza if the throat appeared normal.

CASE 1.—Male, aged 50, of the resident medical staff, St. Marylebone Hospital. Susceptible to attacks of tonsillitis and influenza whenever these were prevalent; otherwise healthy. No history of rheumatism or tuberculosis. Jan. 9th, 1927: Febrile attack; temperature 100° F.; generalised pains; throat normal; heart normal; diagnosed as influenza; confined to bed three days. 14th: Pains in legs, especially in ankles; developed typical medium-sized lesions of erythema nodosum confined to the legs. Condition subsided in a week. Some general debility followed.

CASE 2.—A probationer nurse at St. Marylebone Hospital, aged 24. Subject to attacks of acute tonsillitis. No history of rheumatism or tuberculosis. Jan. 21st: Severe attack of acute tonsillitis with generalised pains in back and limbs; temperature 100° F.; tonsils enlarged and septic with injection and follicular spots; glands of neck enlarged and tender. 29th: Developed a typical severe attack of erythema nodosum; nodules of medium size appeared at intervals, were confined to legs, and were associated with severe pain in the lower extremities, particularly in knees and ankles. By Feb. 11th all lesions had cleared up. Considerable debility followed. Tonsillectomy was performed later.

CASE 3.—A woman, aged 48. Frequent inmate of the hospital, suffering from a mild degree of hyperthyroidism. No history of rheumatism or tuberculosis. Jan. 18th: "Influenza," malaise, and general aching, particularly of back and limbs; mild sore-throat. 25th: Pains in legs; swellings appeared. Feb. 2nd: Admitted to hospital; had typical lesions of erythema nodosum confined to front of legs; nodules of varying sizes and in different stages; some yellow nodules in process of subsidence; others fresh, red, and tender; still complained of pain in joints and fascial planes; temperature normal; heart normal except for slight tachycardia; pulse-rate 90; throat normal. 22nd: Clear.

CASE 4.—Boy, aged 6. History rather indefinite, but said to have been ill about ten days. Jan. 31st: Sent to hospital as erythema nodosum; typical mild attack; few nodules in process of subsidence; pain slight; temperature normal; throat normal. Feb. 8th: Clear.

CASE 5.—Woman, aged 29. No history of rheumatism or tuberculosis. Jan. 26th: "Influenza," headache, generalised pains, and later sore-throat. Feb. 6th: Developed pain and swellings on legs. 8th: Pain in chest on breathing. 9th: Sent to hospital as tonsillitis and ? pleurisy; temperature 103° F.; no definite physical signs in chest but picture suggestive of pleural pain, thought to be possibly diaphragmatic; also pain in neck. On the legs were typical lesions of erythema nodosum; a few large nodules and multiple small ones. Fresh lesions appeared during the next five days. 16th: Temperature normal. 28th: Erythema nodosum cleared up; simultaneously pain in neck and chest disappeared.

I would add that I have the authority of my colleagues that there were two other cases of erythema nodosum in the hospital at this time under their care. Unfortunately, I have been unable to trace the case-records of these.

For contrast I describe below two sporadic cases of nodose eruptions suggestive of erythema nodosum but which I prefer to classify as erythema multiforme, and from consideration of these, and by analogy with two pulmonary conditions, to offer a suggestion which explains the apparent relationship between these two dermatological conditions.

CASE 6.—Probationer nurse, aged 25. Anæmic; never robust; in early part of 1927 had tonsillitis, and later perforated appendix; no history of rheumatism or tuberculosis. May 19th, 1927: Following general malaise, developed multiple, red, tender, subcutaneous nodules on anterior surfaces of both legs; diagnosed as erythema nodosum. June 2nd: Bullous lesions appeared. 23rd: Fresh crop of lesions, some pustular, still confined to legs. August 7th: Practically clear.

CASE 7.—Woman, aged 47. Said to be subject to rheumatism, although the type of pain described was not clearly of the variety met with in true rheumatism. January, 1927: Delivered of an infant which she fed on the breast. April: Developed right mastitis. May 1st: General malaise, and discharge from the right nipple; some days later an abscess in the right breast ruptured spontaneously through the skin. 9th: Pains in joints and tender swellings on arms. 16th: Admitted to hospital, with temperature 103° F., for large abscess of right breast; had an eruption, mainly along subcutaneous borders of ulnæ, of moderate-sized, tender, red nodules, apparently a typical eruption of erythema nodosum. 17th: Breast abscess incised. 19th: Developed a crop of small papules on the hands and forearms. Then the advisability of rediagnosing the condition as erythema multiforme arose. 23rd: Papules disappeared, but a nodule appeared on one leg. June 4th: Recurrent pyrexia and pains in legs with fresh crop of nodules on shins, again very like erythema nodosum. Lesions on arms subsided by passing through typical discoloration stage. 25th: All lesions cleared up and breast practically healed.

In Case 6 it is quite clear that the original nodular lesions were merely a phase and a variety of the eruption of erythema multiforme. The close resemblance to erythema nodosum was soon dispelled with the appearance of the subsequent lesions. In the latter case, however, the resemblance was even closer. Except for the four days when the papular eruption was manifest the case was absolutely indistinguishable from erythema nodosum. Even now I am not convinced that this was not the true diagnosis. The following analogy, however, will perhaps illustrate what I conceive to be the differences between erythema nodosum and multiforme, and why I consider that Case 6 can be separated at once from erythema nodosum, whereas Case 7, whilst very suggestive of erythema nodosum, can be regarded as a variety of erythema multiforme. For the purposes of my analogy I use the characteristics of the two conditions, lobar pneumonia and broncho-pneumonia.

Typical lobar pneumonia is a definite clinical entity, an acute specific infectious disease of known ætiology and abrupt onset. Sporadic cases and epidemics are known. It produces characteristic physical signs (of consolidation limited to one area of the lung). Its tendency is to clear up entirely and recurrences are not common. Broncho-pneumonia (secondary) is, however, an entirely different condition, of mixed ætiology and varied manifestations. Its onset is often insidious but may be abrupt. Its physical signs are many and varied but may be typical, and in a straightforward case confusion with lobar pneumonia is unlikely. It tends to be pro-

[1] G. F. Walker: The Place of Erythema Nodosum in Medicine. British Journal of Dermatology and Syphilis, June, 1927, p. 241 (with bibliography).

tracted and recurrences are common. Nevertheless, atypical cases are frequent, and one type, owing to its close similarity to lobar pneumonia, is labelled the pseudo-lobar form. In this a confluent patch of broncho-pneumonia may be the only clinical manifestation and the differentiation from lobar pneumonia extremely difficult.

In the analogy I wish to draw erythema nodosum can be aptly compared with lobar pneumonia. Practically all that has been said of the one can be applied to the other. Similarly, erythema multiforme can be considered analogous to broncho-pneumonia. In its typical manifestation erythema multiforme is quite distinct from the condition which has been labelled nodal fever, but the unusual nodose type of erythema multiforme may bear a striking resemblance to erythema nodosum. Case 6 illustrates this point very well, but the similarity was short-lived. Having, then, admitted the possibility, it is easy to accept Case 7 as a similar example in which the transient papular eruption supplied the clue to the problem.

I wish to acknowledge my indebtedness to Mr. B. Hood, medical superintendent of St. Marylebone Hospital, for his permission to publish these cases.

A CASE OF HYPERTROPHIC LEUCOPLAKIA OF THE TONGUE

TREATED BY SOUTTAR'S CAUTERY.

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THE possible developments of intractable leucoplakia of the tongue, to which the classical work and publications of Butlin [1] first drew general attention, are now fully realised and justly feared. Many of the early cases yield to antisyphilitic treatment and elimination of oral sepsis and irritation—as from excessive smoking—but it will be admitted that occasionally these measures seem powerless to cure, or even arrest, the progress of the disease. The text-books are very pessimistic. Prof. R. L. Sutton states [2] that ". . . . it is exceedingly rebellious to treatment, and many cases are practically incurable. The possibility of cancerous involvement should always to borne in mind." R. W. MacKenna [3] likewise describes it as ". . . . very rebellious to treatment, and prone to become cancerous"; and David Lees [4] is equally emphatic, remarking that "it is peculiarly resistant to treatment and is often the precursor of malignant disease." Many similar quotations might be given, but there are probably no disputants of Butlin's original thesis, and we are free to inquire what remedies are available when anti-syphilitic drugs and dental ministrations have failed us. Sutton [2] gives a long list. It includes mild astringent and alkaline mouth washes, pencilling with silver nitrate, methylene blue, resorcin (Unna), 20 per cent. solution of chromic acid, pure acid nitrate of mercury (Sherwell), and the actual cautery (Stellwagon). Carbon dioxide snow, in spite of the risk of reactive swelling, has its advocates, and during the past ten years X rays and radium have been employed with good results and occasional cure in mild cases.

Most authorities would agree with MacLeod,[5] who maintains that ". . . . caustic remedies or the actual cautery should be used with the utmost caution for fear of producing malignant changes, and on the whole are better avoided." With this view I am in entire accord, for the reason that none of them go far enough. They may fairly be described as *half measures* in that they do not aim at removing the whole of the actively growing and irritated area. None of us would contemplate their employment for lingual cancer; why, then, have they been advocated and used for a condition which may, and not infrequently does, proceed to that state? It seems strange that with so serious a prognosis surgeons do not come forward more frequently with the suggestion of dissection or plastic ablation of the diseased mucous membrane in resistant cases. The fact is that such cases are allowed to drift, and the ultimate fate of some of them is a sad commentary on modern therapeutics.

It was the very chronic and intractable case I am about to report that first turned my attention to the possibility of radical destruction or extirpation of such areas, but it was not until Mr. H. S. Souttar had perfected his steam-heated cautery [6] that I believed myself in a position adequately to effect this. I might, it is true, have availed myself of diathermy, of which I had had some previous experience in cases of rodent ulcer and lupus vulgaris; but I had discovered for myself that its action as regards penetration, which probably depends on variations of electrical conductivity, is most unreliable and difficult to assess and control, and I considered that for a relatively superficial condition it was not an ideal implement. A deep burn in a muscular and highly mobile and sensitive organ like the tongue might lead to deformity or a most irksome fixation, and then again there was the possible if remote risk of igniting the anæsthetic gases by accidental sparking during the operation. Mr. Souttar's simple device, which has not yet received the recognition it undoubtedly deserves, is free from all these objections and dangers, and I have used it repeatedly in cases of rodent ulcer on the nose and in close proximity to the upper air passages.[7]

The subject of this report is a stout, healthy looking widow of 55. She contracted syphilis in 1904, and was treated for 18 months according to the best regimé then available at St. Bartholomew's Hospital. About seven years before she attended at the Royal Northern Hospital she began to suffer from a sore tongue, and for a further seven years she most patiently attended our venereal department, where, in spite of vigorous and repeated courses of novarsenobenzol, silver salvarsan, mercury, bismuth, and iodides, the extraction of all her teeth, and the local application of all the accepted remedies, including X rays, the lingual condition remained *in statu quo ante*, and the strongly positive Wassermann reaction could not be shaken. In July, 1924, I noted that the dorsum of the organ was smooth, shiny, and entirely destitute of the normal papillæ, and about the centre there was a roughly quadrilateral patch of hypertrophic sodden epithelium which closely resembled a fragment of adherent wet chamois leather three-quarters of an inch across at its greatest dimension. It was evident that this patch was the source of her symptoms, and in April of this year I considered that its destruction by means of Souttar's cautery was not only feasible but offered a good chance of cure. On May 28th she was admitted to the wards, and on May 31st, under a general anæsthetic (intratracheal ether), a stitch was passed through the muscle and the organ drawn forward. After thorough drying with gauze the whole of the affected area (and a little beyond) was coagulated with a suitable steam-heated applicator. The resulting débris was easily scraped away with a sharp spoon. The slight oozing was controlled at once by another application of the cautery, and to make certain that a sufficient depth had been reached the procedure was repeated a second time until the surface of the underlying muscle was exposed. The dry eschar was coated with a thin layer of Whitehead's varnish, and the patient sent back to the ward. No pain was felt on recovery from the anæsthetic, nor was this complained of until some five days later, when the slough separated and left a raw, tender surface which caused a good deal of trouble during the following week. Healing was complete when the patient was seen on July 8th. The white patch had been completely replaced by the shiny smooth surface common to the rest of the tongue, and there was no sign of contraction. The patient stated she had lost all her discomfort and was able to masticate freely and taste all her food.

The symptoms described under the heading of "Smooth Tongue" in Butlin's admirable book [1] (pp. 141–43) are not present in this case, and it must not be forgotten that in his day the important element of dental sepsis was hardly considered in its relation to diseases of the tongue.

It is obvious that success in a single case cannot justify the drawing of broad conclusions, but I am hopeful that in a certain type of chronic and intractable papillomatous overgrowth the method will be found of considerable value. The technique is very simple,

and with good anæsthesia should not give rise to difficulty. The local application of anæsthesin, which was not tried in this instance, may help future patients over the period when separation of the slough gives rise to pain.

Summary.

A chronic resistant patch of hypertrophic leucoplakia lingualis of syphilitic origin was submitted to coagulation by Souttar's steam-heated cautery with satisfactory results. The method is simple and offers no special difficulties. It should find a considerable field of usefulness in cases with demarcated hypertrophic patches and fissuring, but it is not suggested that it should be used until the recognised methods have received a thorough trial.

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TREATMENT OF POST-PARTUM HÆMORRHAGE.

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HÆMORRHAGE occurring after the birth of the child may have its origin at the placental site or at any other area in the genital tract where a breach in continuity of the surface has opened up the subjacent blood-vessels. It is helpful to determine from which source the bleeding occurs, and as a working rule it may be said that if bleeding is continuous and without relation to the state of contraction of the uterus a laceration is the cause.

Unless the torn surface is discovered the preliminary stages of the treatment must be identical with those of post-partum bleeding from the placental site, to be described later. Marked post-partum bleeding most often has its origin at the placental site. The retention of the partially separated placenta in the uterine cavity prevents the uterine muscle from exercising its full retractile effect on the gaping sinuses. The treatment of this bleeding is the main subject of the present article.

Ætiology.

Insufficiency of the uterine contractions may be due to various causes. The contractions of the third stage may in themselves be feeble and primary uterine inertia in the first stage of labour would presage this. Second stage pains are largely voluntary. The uterus contracts and causes a descent of the child on to the levator ani and the perineum; the reflex stretching of these structures provokes an expulsive effort of the abdominal musculature. Quite a small stimulus—in other words, a weak uterine contraction—might provoke a large voluntary expulsive effort, and it therefore comes about that the visible efficiency of the second stage is not a true criterion of the functioning of the uterus itself. Or the uterine contractions may be sufficiently strong and yet abnormality in the mechanism of placental separation may hinder the process. A further factor responsible for hæmorrhage is too early resort to Crede's expulsion. If the placenta is separating by the mechanism of retroplacental hæmatoma formation (Schultze's method) each succeeding uterine contraction is producing a uniform tension on the imprisoned blood, causing it to move centrifugally and force itself uniformly into the periphery of the area still attached. At the same time there is a shortening of the uterine muscle-fibres which further assists uniform separation. Obvious bleeding, consequent on this separation, occurs mainly after expulsion of the placenta. Premature attempts at Crede's expulsion may cause the retroplacental hæmatoma to find an outlet at one point, thereby destroying the mechanism, and since the placenta is still attached to its site by a large part of its circumference an obstacle is created to its further separation, which will then follow on the lines outlined by Duncan. It is possible also that undue stimulation of the uterus by vigorous kneading and by attempts at Crede's expulsion cause the lower segment of the uterus to retract down and interfere with placental delivery. These causes of failure to expel the partially separated placenta prevent complete retraction of the muscle-fibres and the consequent occlusion of the placental sinuses.

Prophylaxis.

It is important to counteract these ætiological factors. In the first stage primary inertia is overcome by resting and reassuring the patient, treating sleeplessness, and by quinine in ordinary therapeutic doses. In the second stage delivery must not be assisted in the presence of secondary inertia; the child should be delivered slowly and during a uterine contraction. The hand should be on the fundus throughout the whole of this process. In the third stage premature attempts at expulsion of the placenta must be rigorously avoided though the uterus should be supported and gently massaged, if necessary, to overcome flabbiness and to prevent the cavity filling up with blood. It is as well also to anticipate post-partum hæmorrhage in cases where there is a family or individual predisposition to it, and also where uterine inertia might be threatened by multiple pregnancy, hydramnios, or antepartum hæmorrhage.

Treatment.

When the placenta separates by Duncan's method bleeding occurs freely during the process, whereas in Schultze's mechanism most of the bleeding occurs afterwards. Loss of more than 15 to 20 oz. may arbitrarily be taken to constitute post-partum hæmorrhage. It is assumed that until this amount has been lost the uterus has been supported in the hollow of the hand and any flabbiness counteracted by gentle massage. If in spite of this hæmorrhage tends to pass these arbitrary limits, treatment must become active. It is well, before conducting the third stage of any labour, to have in readiness a pair of boiled rubber gloves and a syringe charged with 1 c.cm. of pituitary extract of a brand containing a minimum of foreign protein. If the hæmorrhage, although excessive, is not of immediate urgency the hands and forearms should be re-sterilised as efficiently as possible while an assistant controls the uterus. The accoucheur then supports the fundus in the hollow of the left hand while the patient lies on her back with the buttocks at the edge of the bed. The assistant bathes the vulva with water at a temperature of 120° F., a proceeding which stimulates the uterus to contract and at the same time helps to cleanse the parts. Then the uterus is rubbed up, and at the height of its contraction a forcible attempt at Crede's expulsion is made. If this fails 0·5 c.cm. of pituitary extract should be injected intramuscularly by the assistant. The next contraction is awaited and expulsion then attempted again.

Primipara; delivery at full term; hæmorrhage commenced freely after 20 minutes of placental separation, loss approximately 1 pint. Patient's condition good. Crede's expulsion failed. Pituitrin 0·5 c.cm. was injected and at height of contraction the placenta was expressed. No further loss.

If failure attends this second attempt the finest judgment is called for in deciding how long to temporise before invading the uterus. There is risk of losing the patient through continued hæmorrhage, but invasion of the uterus is attended in a certain number of cases with fatal sepsis. If removal can be performed with strict asepsis, as at a lying-in institution, the danger of infection is small and invasion should not be unduly postponed. If the home conditions and the personal hygiene of the patient are satisfactory the risks are

slightly greater, but it would be safer to err on the side of early placental removal than to expose the patient to further hæmorrhage. In proportion to the unsuitability of the surroundings the difficulty of maintaining asepsis increases, but notwithstanding this no patient should be permitted to drift into a stage where life is endangered. If the bleeding is in large gushes and the loss is rapidly mounting up to the 30 oz. mark, there is no alternative but immediate evacuation.

Primipara; forceps delivery at full term; prolonged second stage. Ten minutes after delivery bleeding was profuse and loss continuous. The uterus was not responsive. Crede's expulsion during contraction failed; 1 c.cm. of pituitrin a few minutes later was followed by an unsuccessful attempt at expulsion. Loss approaching 30 oz. without any indication of ceasing. Manual removal of placenta. 100 c.cm. of antistreptococcal serum injected in two days. Highest puerperal temperature 100° for one morning only.

If the bleeding has reached a pint and the patient shows signs of collapse, removal should not be delayed. Most women, however, will not be seriously affected by a loss of this amount. In some cases an injection of 0·5 c.cm. of pituitary extract is sufficient to cause temporary faintness shortly after the dose has been administered. and allowances must be made for this. If the bleeding has reached a pint and a half, the patient does not appear dangerously affected. and yet there are no signs of rapid birth of the placenta, it is as well to invade the uterus since further loss will certainly accompany separation and added bleeding might intervene.

Primipara; normal delivery; second stage of two hours. Profuse and immediate loss of 30 oz. Manual removal of placenta forthwith. Antistreptococcal serum injected (40 c.cm. in all). No raised temperature throughout puerperium. Involution normal.

Multipara; normal delivery; short second stage. An hour and a half after delivery the patient was losing very gradually, in all about 30 oz. Pituitrin 0·5 c.cm. injected. Expulsion not successful but the loss was much diminished. The placenta eventually needed manual removal. The patient's condition was fair throughout. Antistreptococcal serum, 80 c.cm. in all, was injected. There was no raised temperature throughout the puerperium.

If the bleeding has ceased it is a moot point whether a patient who has lost 30 oz. of blood and is shocked in consequence should be left to recover from this shock before evacuation. Occasionally a period of recovery may be allowed, but it should be as brief as possible, *and the accoucheur should certainly not leave the patient meanwhile.* His hand should be kept on the fundus uteri, especially if the foot of the bed has been raised, because any blood lost, instead of revealing itself by gravitating towards the cervix, is retained and tends gradually to fill the uterus, especially as the muscular tone has been diminished.

The best way of estimating blood loss is by careful collection in receivers of known size. The figures given allow for the defects of this method.

Removal of the Placenta.

The following technique should be carried out. The extravaginal part of the cord and the skin around is painted over with iodine. The left hand supports the uterus, the thumb being in front and the fingers behind; the gloved right hand, which has been kept sterile, is carefully introduced through the vulva into the vagina and is *not* withdrawn until the placenta is brought away with it. The cord is the best guide into the cavity of the uterus and the fingers follow its length until the placenta itself is reached. The uterine surface of the membranes is sought and separation commenced by a sawing movement. The external hand prevents the fundus from rising, thereby facilitating the manipulations of the internal hand. At this stage bleeding may be profuse, but the separation must be carried out deliberately and without any flurry. Sometimes difficulty is experienced with the last attached portion because it is the most inaccessible and because the hand becomes cramped. If this attached portion is a small one gentle traction on the mass of the placenta is permissible and will almost always effect separation This is better than withdrawing and reinserting the hand. With the external hand the uterus is stimulated to contract and the internal hand is expelled with the placenta in its grasp. When the placenta is removed and bleeding persists, bimanual compression should be practised. Pressure is applied by the internal hand through the anterior fornix, the external hand meanwhile anteverting and pressing the body of the uterus downwards. In this way the placental site is compressed and bleeding temporarily checked. The remaining 0·5 c.cm. pituitrin is injected intramuscularly at this stage. If these means are insufficient bimanual compression should be maintained till a douche of at least six pints at a temperature of 118° F. is available. A drachm of iodine or lysol is added to each pint. The cervix is drawn down to the vulva and an intra-uterine nozzle is inserted as far as the fundus. Irrigation is continued till bleeding ceases. The patient is promptly treated for hæmorrhage in the routine way. An injection of gr. ¼ of morphia is administered and 1 c.cm. of aseptic ergot is given intramuscularly and followed up with drachm doses of ergot four-hourly by the mouth. Where feasible blood transfusion should be tried whenever the hæmorrhage has threatened life. In spite of aseptic precautions antistreptococcal serum should be given about 20 c.cm. each day for five days. As soon as the patient's condition permits, she should be propped up in bed so that any exudate gravitates into the pelvis. It is always advisable, after hæmorrhage of any severity, or in any delivery where atony of the uterus is suspected, for the patient to be watched for six to eight hours for concealed bleeding, especially when the foot of the bed is raised.

Multipara; forceps delivery; placenta normally born but accompanied with a loss of about 30 oz. Patient affected by hæmorrhage. Foot of bed raised. Pituitrin 1 c.cm. injected; ergot by mouth. Uterus displayed good tone. Four hours later uterus was discovered greatly enlarged with blood-clot (about 15 oz.).

In conclusion, it should be pointed out that the definite diagnosis may be complicated by a ruptured uterus or hæmorrhage into the pelvic cellular tissues, but the lines of diagnosis and treatment outlined should cover nearly all cases of post-partum hæmorrhage.

Clinical and Laboratory Notes.

A NOTE ON DRAINAGE OF A PELVIC ABSCESS PER RECTUM

AND THE INDICATIONS FOR THE SELECTION OF THIS ROUTE.

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MY enthusiasm for drainage per rectum, in selected cases of pelvic abscess, was aroused when I was attached to the clinic of Mr. James Sherren, who often used this method.

The pelvic abscess to which I refer is one which is seen in surgical, as opposed to gynæcological practice, and usually, but not necessarily, arises as a complication of acute appendicitis. As is well known, pus can accumulate in the pelvis without serious constitutional disturbance; it is therefore not surprising that these abscesses may attain considerable proportions before being recognised. The most characteristic symptoms to which they give rise are diarrhœa and the passage of mucus. The latter is of cardinal diagnostic importance, and is not sufficiently emphasised in current teaching; it is no exaggeration to say that the passage of mucus occurring for the first time in a patient who has, or has recently had, an attack of acute appendicitis, is pathognomonic of pelvic abscess.

Rectal examination reveals a bulging of the anterior rectal wall, which, when the abscess is "ripe," becomes softly cystic. It is inaccurate to say that it fluctuates, unless fluctuation can be elicited between it and the anterior abdominal wall. Fluctuation cannot be tested with one finger.

Left to nature, a proportion of these abscesses burst into the rectum, after which the patient nearly always rapidly recovers. Deliberate opening into the rectum may be contemplated when the swelling is quite soft. Evacuation of pus by this method was extensively used 20 or 30 years ago, but the practice has fallen into disfavour, and has now been almost entirely supplanted by suprapubic drainage. We have not far to seek for the reason of this change. It is easy enough to mistake a loop of obstructed intestine occupying the recto-vesical pouch for a collection of pus. Again, a collection of pus in the pelvis does not necessarily imply that there is a confined abscess in this situation. In other words, rectal drainage is a blind operation, and has justly earned a reputation of being dangerous. All blind operations eventually fall into disrepute, for they are sooner or later fraught with disaster. Blind rectal drainage should be reserved for those cases where the history, the free discharge of mucus, the softly cystic swelling, and complete absence of abdominal rigidity, make the diagnosis of a localised abscess pointing in the rectum absolutely undeniable. If there is the slightest doubt—and it is sometimes difficult, particularly in postoperative cases, to be quite certain—laparotomy should be performed; but, having opened the abdomen in the doubtful case, having ascertained that there is no obstruction present, having gently felt a mass occupying the true pelvis, and having seen that that mass is completely walled off from the general peritoneal cavity, I submit that to close the abdomen immediately and then to drain the abscess into the rectum is a practice which fulfils the highest object of surgery. To choose the alternative (suprapubic) route for evacuating the pus seems most undesirable, if not positively mischievous, for of necessity Nature's barriers must be broken down and the general peritoneal cavity exposed to the dangers of a spreading infection.

Technique.—The patient is placed in lithotomy position. A rectal speculum is introduced and the swelling of the anterior rectal wall is seen. Very characteristic is the passage of mucus down the speculum. The mucosa overlying the swelling may be nicked, but this is unnecessary. A long pair of blunt-ended sinus forceps are taken and plunged into the swelling; the blades having been opened, pus pours down the speculum. Keeping the forceps still in the abscess cavity the speculum is withdrawn as far as the handles of the forceps allow. The right forefinger is guided by the forceps into the abscess cavity, after which the forceps and speculum are completely removed. A drainage-tube is then insinuated along the forefinger into the abscess cavity. This drainage-tube is long enough to protrude out of the anus, and, when in position, is secured to the anal verge by a stitch. The patient is nursed in Fowler's position and the tube removed on the fourth day.

Preliminary laparotomy and inspection have robbed rectal drainage of its terrors.

A CASE OF
SUBCUTANEOUS FIBROID SYPHILOMA.

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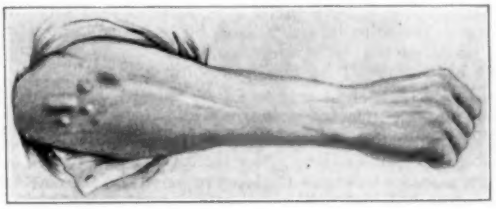
IT seems worth while to report the following case, attention having been called recently to the rarity of the condition by Dr. C. Worster-Drought.[1]

The patient was a chauffeur, aged 45, married. He had one living healthy child, one had died of "convulsions" in infancy, and his wife had no history of miscarriages. He had had no previous illnesses except venereal disease, stated to be gonorrhœa, when he was 20. His mother died of "heart trouble," and his father of cancer, both over 60.

About 20 years ago a lump appeared over the back of both olecranon processes at points where the arms rested on the well seat of the car he was then driving. They were small, single, and painless, and very gradually increased in size until 12 months ago, when the one on the right arm received a blow and a sore resulted. This kept breaking down, satellite nodules then appeared; at about the same time a second nodule appeared on the left arm, and a sore on the back of the right calf.

On the left arm there is a lump of cartilaginous consistency the size of a walnut over and partly attached to the posterior border of the ulna at its upper end. There is a smaller nodule distal to this. X rays show slight osteitis of the



Lesions on right arm.

posterior aspect of the shaft of the ulna. On the right arm there is a similar nodule, unattached to the bone, in a corresponding position, with several smaller nodules round it. X rays show no evidence of bony change in the ulna. Lastly, there is a thickened patch of skin measuring about 1¼ in. by ¾ in., brownish in colour, and not tender, on the back of the right calf. The pupils react normally, the knee-jerks are absent, and the blood Wassermann reaction is positive.

Histological Appearance of the Lesions.—The structure of all the lumps is similar, showing thick bands of almost hyaline fibrous tissue, between which is more richly cellular fibrous tissue infiltrated with small round cells, plasma cells, and in some places giant cells. The blood-vessels here show perivascular round-celled infiltration, and some of them endarteritis. No spirochætes were found in sections stained by Levaditi's silver method, and no tubercle bacilli were seen in a Ziehl-Neelsen preparation. The structure is that of a fibrosing gumma.

The points that seem worthy of special notice are the interesting exciting cause, the extreme chronicity of the lesions with the production of other similar nodules at a much later date, and the comparative freedom of other symptoms or signs except the absent knee-jerks over a prolonged period in a patient who only received antisyphilitic treatment probably with mercury for a short period after the acquisition of the disease.

I wish to express my thanks to Mr. W. H. Ogilvie, under whose care this patient was, for permission to publish details of his case, and also for the drawing here reproduced.

[1] THE LANCET, 1926, ii., 637.

A CASE OF
HOMICIDAL STRANGULATION OF A FŒTUS BY THE UMBILICAL CORD.

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PRINCIPAL MEDICO-LEGAL EXPERT, EGYPTIAN GOVERNMENT SERVICE.

OCCASIONALLY a child is born with the umbilical cord tightly twisted round the neck, and if no assistance is at hand to remove the pressure death might quite conceivably result from strangulation. In such a case the lungs would not be inflated, but a certain amount of breathing might occur; the head may have been born with the cord loosely twisted round the neck and the child might breathe before the descent of the body tightened the cord. If it were not removed the body would present signs of live birth with the establishment of breathing and also signs of death from asphyxia.

Assuming this to be possible a person who wished to cause the death of a child might strangle it with the umbilical cord without incurring suspicion of homicide. It would be difficult, for, unless the placenta were born with the child the cord would have to be cut before it could be used as a ligature. This

would arouse suspicion, for if a child were strangled by the cord in the natural process of birth one would not expect the cord to be cut. Moreover, if the cord is tied round the neck tightly enough to cause strangulation it must be pulled and handled with some violence, which would cause considerable displacement of the Wharton's jelly. Finally, and this is most important, homicidal strangulation by the umbilical cord is never carried out calmly enough to prevent injuries to the tissues of the fœtal neck from the fingers of the assailant and the cord. In accidental strangulation during birth it is rare to find anything but a depression in the region of the cord, and there are no other marks of violence about the face or neck. This is illustrated by the following case :—

A newly-born child was found on the street wrapped in paper and was forwarded to the medico-legal mortuary for examination. It was found to be a full-term, well-developed child. The umbilical cord was tightly twisted round the neck and tied. Both ends of the cord were cleanly cut. The Wharton's jelly was displaced in parts and the cord had been stretched and pulled violently. Around the edges of the depression made by the cord there were numerous ecchymoses, and marks of finger-nails were observed on both sides of the neck and on the left side of the face. The ears, lips, and tips of the fingers were blue and the case presented the typical signs of asphyxia.

On dissection the lungs were found to fill the pleural cavities, were mottled red, and presented all the signs of lungs that had breathed. Fine froth was found in the trachea and bronchi. On placing the lungs in water they floated buoyantly, and after cutting into pieces and applying pressure every part still floated. Around the base of both lungs, on the anterior surface of the left lung, and on the surface of the heart there were numerous small hæmorrhages. The stomach and duodenum, removed separately, both floated. There was no food in the stomach and the rest of the viscera were healthy.

From the above examination it can be affirmed with certainty that the child was born at full term, that it breathed and lived in the legal sense of the term, and that it was killed shortly after birth by homicidal strangulation with the umbilical cord.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF ORTHOPÆDICS.

THE first meeting of the session was held on Oct. 4th, when Mr. W. ROWLEY BRISTOW gave his presidential address on

ARTHRODESIS.

He said that among the changes in bone and joint surgery which had been evolved since 1912, both in this country and America, one of the most marked was the frequent resort to fusion of joint surfaces—i.e., arthrodesis. This must be regarded as destructive, seeing that the joint, as such, was destroyed, but as a rule it was preferable to the usual alternative—amputation—and the arthrodesis might cure the disease and abolish the symptoms.

Indications.—The indications for arthrodesis he conceived to be: (1) pain, (2) loss of function (with or without deformity). Both these often resulted from arthritis, including tuberculosis, concerning which latter there was marked difference of opinion, that he hoped would emerge in the discussion. Pain and loss of function might also ensue from trauma, and from paralysis the result of anterior poliomyelitis or of peripheral nerve injury. Treatment of paralytic scoliosis by spinal fusion was now on trial.

Contra-indications.—The contra-indication most often met with was fixation or loss of control of a neighbouring or corresponding joint, as in cases of fixed knee with a painful hip on the same side. Age he did not regard as so serious an argument against joint fusion as did many. It had been his practice, said the President, to treat all joint tubercle in children by conservative means, operating for it only in the adult. A study of end-results in series of cases so treated showed, however, forced an unfavourable view as to the efficacy of this treatment. Nevertheless, in his experience the result of the conservative treatment of Pott's disease was satisfactory, as was also that of such treatment of small joints. He contended that the ultimate results of conservatism in the case of tuberculosis of knee or hip were bad. In 50 cases of hip tubercle analysed by Mr. G. Perkins, the femoral head was diseased and altered in 41, resulting in fibrous ankylosis, with, later, adduction deformity. An important question was whether, when the head was affected, the hip should be arthrodesed, and if so, by what means? In the active stage of tubercle intra-articular arthrodesis did not produce bone fusion; but the methods of extra-articular arthrodesis, as advocated by Hibbs, of New York, and by the Boston school, gave this fusion, with stabilisation of the joint by means of a bridge of bone. The average stay in hospital of a patient with a tuberculous knee was very variable. Some children did better lying in bed wearing a Thomas knee-splint, others by having, after the acute stage was over, a weight-relieving caliper or patten-ended Thomas splint. Usually the commencement was in synovial disease. When the bone was affected in tuberculosis of the knee in children the President thought arthrodesis should be considered. His contention was that there was a type of joint which did not respond to conservative methods, and that each patient should be regarded as an isolated problem.

The President then proceeded to discuss the technique of the intra- and extra-articular methods of operating, remarking that extra-articular arthrodesis of the hip was a recent innovation, and that the procedure adopted by Hibbs was one which strongly appealed to him. Certainly occasions arose when it was necessary to fix the hip and stress was rightly laid on saving the periosteum. Where bone fusion had been done and patients so treated had subsequently died of intercurrent disease the specimens showed a firm arch posteriorly, and the fused joints between the articular processes. It was necessary, he said, to emphasise the use of arthrodesis in the treatment of painful joints following fractures or other trauma; it was the best for old mal-united ankle-joint fracture when arthritis was present. And not many subjects of fractured os calcis resumed full work. Wilson, of Boston, advocated immediate arthrodesis of the sub-astragaloid joint for fracture of the os calcis, as the patients were then able to return to their work in a reasonable time. Arthrodesis of the spine was practised in America for crush fractures of the vertebræ, while for low backache arthrodesis of the sacro-iliac joint was becoming popular.

The President had not found it necessary to fix either end of the clavicle for recurrent dislocation of the acromio-clavicular or the sterno-clavicular joints. In the case of the hip severe pain, with or without a crippling deformity, was what urged him to advise operation. When both hips, or a hip and a knee on the same side, were involved, arthrodesis of the hip was out of the question. Reconstruction of the hip, though still to be regarded as in the experimental stage, was well worthy of a trial. The operation was simple, and there was but little shock. The after-treatment consisted in moderate fixation for a month, after which the patient was allowed to get about. There should be frequent manipulation in the direction of extension and abduction. In conclusion he referred to the work of Dunn in this country in the treatment of paralytic deformities of the foot, his work having stood the test of time and resulted in a good functional foot. For many problems arthrodesis offered a successful solution, and especially was it valuable in relieving pain.

Discussion.

Mr. R. C. ELMSLIE said that 17 years ago he had collected a large number of cases of old excision of the knee for tubercle, done at various hospitals by

several surgeons as a short cut to a cure of the disease and to secure early ankylosis. The proportion in which there was bad deformity was very high. That deformity depended on two factors: interference with growth and bending of the bone at the point of fusion. He thought growth might be interfered with, not by disturbing the epiphyseal discs but by even going approximately close to them. If bony ankylosis was the best treatment for tubercle of bone, it should be done, but it should not be preached as the one method of treating tuberculous knees. In advocating fusion for tubercle there was the risk that it might be regarded as the routine operation, and that it might be done by men who were operators rather than surgeons.

Dr. W. T. GORDON PUGH said the great drawback in children's hospitals in the country was that children with tuberculous knees did not come at an early enough stage, but there had been a change for the better in this respect during the last two years. A result of this would be that arthrodesis would be necessary in a diminishing number of cases. He knew no more difficult disease to control than a tuberculosis of the knee which had passed beyond synovial involvement. In cases in which the great trochanter was much displaced upwards extra-articular arthrodesis would probably be necessary.

Mr. G. R. GIRDLESTONE expressed his agreement with the remarks of both the last speakers, and said it could not be too strongly insisted that there was no short cut of any kind to treatment of surgical tuberculosis. The disease was affecting the glands of the child as well as the joints, and he agreed that there was real danger in associating tuberculosis in a joint with operation on it for the cure of that disease. He agreed with Sir William Wheeler that spinal fixation was only part of the conservative treatment of spinal tuberculosis.

Mr. W. H. TRETHOWAN said that reconstructive operations were usually disappointing, and the final treatment seemed to be, mostly, some procedure to fix the joint. In very many cases a joint injured beyond the least trauma seemed to be ruined eventually, even though rest relieved pain for a time. He had not a good opinion of the operation of mushrooming—i.e., shaving off the whole of the head and leaving only the central portion of the neck. The small neck would not support the weight of the whole body. He did not agree with those who would refrain from setting up a high ideal of practice because some might do wrong operations.

Mr. NAUGHTON DUNN said that arthrodesis did not always relieve the pain of crushed fractures of the spinal column. Before operation was decided on in these cases it was well to fix the spine for a week or two; sometimes that relieved the pain, and rendered any operation unnecessary. Arthrodesis he had also found very valuable in cases of Charcot's disease of joints.

Mr. ALAN H. TODD expressed himself as favouring ankylosis of the spinous processes for aching backs and for crush fractures; in the Air Force, unfortunately, such accidents were not rare. He suggested that members of the Section as a whole should make more use of arthrodesis of the shoulder in cases of infantile paralysis. He had wondered what was the truth about the danger of activating, by operation, bygone tuberculosis, and referred to a case in which operation on a knee which had at one time been deformed by tuberculosis resulted in meningitis.

Mr. H. A. T. FAIRBANK agreed with Mr. Dunn about the results of arthrodesing Charcot joints; in selected cases he had found it very useful. He had attacked the acromio-clavicular joint by operation, and had had entirely satisfactory results. When tension made apposition difficult, he used wire or kangaroo tendon, and there was nothing to complain of.

The PRESIDENT, in his reply, said that in tuberculosis of joints he would operate only after prolonged rest and in carefully selected cases.

Reviews and Notices of Books.

MALARIA IN INDIA.

By Major-General Sir PATRICK HEHIR, K.C.I.E., C.B., C.M.G., M.D., I.M.S. (retd.). London: Humphrey Milford, Oxford University Press. 1927. Pp. 490. £2 2*s*.

SOME 17 years have elapsed since Sir Patrick Hehir brought out a modest work on the "Prophylaxis of Malaria" in India and out of it has been evolved the present compendious volume. There have been smaller treatises which have dealt with the many aspects of this great subject as it affects life in India, but the time is opportune for a comprehensive and authoritative work on the principal scourge on the empire, and Sir Patrick Hehir has been happy in his resolution to undertake it. We have here embodied the results of a life-work by one who has closely followed the subject from the very earliest glimmerings of truth to the fully expanded present knowledge of malariology.

The work is divided into three parts; the first concerns itself with the endemiology, epidemiology, and ætiology of malaria in India; the second with the clinical and pathological effects of the disease; while the third deals with the methods of prevention. There are also some 30 pages of appendices, for the most part statistical. In the opening chapters the overwhelming importance of malaria to the public health of India is indicated by the truly appalling statistics in relation to its ravages; the geographical distribution is illustrated by a coloured map specially prepared by Col. S. R. Christophers, and the meteorological conditions are also minutely considered. The consideration given to the anopheline mosquitoes in India, their nomenclature, habits, and characteristics is in proportion to their importance, and we have seen no other work in which this information is so minutely summarised. The malaria parasite and its life-history receive full consideration, as also do the clinical and pathological effects of the disease, and the vexed question of blackwater fever. Quinine, its preparation and chemistry, are subjects upon which it is particularly difficult to obtain information in books of tropical medicine, but here we are given a full description of its pharmacology in its bearing on the prophylaxis of malaria in so far as it concerns India. We may note that, in spite of the recent experimental evidence, the author still remains convinced of the value of quinine in prevention. The closing chapters appeal to the practical sanitarian, whom they will inform on anti-mosquito measures and the methods of drainage which must accompany them.

The volume is well illustrated by over a hundred text figures and 15 coloured plates reproduced from well-known works on malaria. Those calling for special mention are from Byam and Archibald's "Practice of Medicine in the Tropics," and the coloured figures of mosquitoes are particularly fine. The author is to be congratulated upon the fact that at the later end of an active career he has produced a volume which will rank amongst the classical works on malaria and which will be particularly useful to his many fellow medical officers in India.

RESEARCHES IN POLYNESIA AND MELANESIA.

By PATRICK A. BUXTON, M.R.C.S., D.T.M. & H., formerly Milner Research Fellow; Director, Department of Medical Entomology, London School of Hygiene and Tropical Medicine. Assisted by G. H. E. HOPKINS, M.A., F.E.S. Published by the London School of Hygiene and Tropical Medicine. 1927. Pp. 260. 10*s*. 6*d*.

Dr. Buxton has produced a noteworthy and readable account of his researches in Western Samoa, the Ellice and Tokelau Islands, and, finally, of his travels in the New Hebrides in the latter half of 1925. His work is in direct continuation of a number of expeditions to the Pacific Islands which have been undertaken by the London School of Tropical Medicine during the last 17 years. Leaving England in November, 1923,

Buxton and his party made their way through Panama, where they were given opportunity to study the public health arrangements of the Canal zone, to New Zealand. Travelling through Fiji they reached Apia in the middle of January, 1924. For the whole of 1924 and 1925 Dr. Buxton made Apia Hospital his base, and thence was able to make trips further afield. He gives a description of the geography and structure of the islands, and comments on the geology, flora and fauna. His notes on the climatology of Samoa include a mass of accumulated data of considerable value, such as solar radiation, rainfall, atmospheric humidity, wind, evaporation, and katathermometer readings. Dr. Buxton has, moreover, devised a new instrument—the radiation integrator in vacuo—which showed the monthly irradiation to be as high as 12 per cent. of the annual total in February, when the sun was vertical, and as low as 6 per cent. in June and July, when the sun was furthest from its zenith.

The third part of the volume deals with medical entomology—the natural and introduced species of the island insect fauna. We learn incidentally that the common flea was introduced to Rarotoga in 1820 by Goodenough, who discovered that island; "the placid natives of Aitutakai, observing that the little creatures were constantly restless and inquisitive, and even at times irritating, drew the reasonable inference that they were the souls of deceased white men." As to the mosquitoes, south and east of the New Hebrides, the genus anopheles is absent and no malaria occurs in the Loyalty Group, New Caledonia or any part of Polynesia. *Anopheles punctulatus* and malaria occur eastwards as far as 170° E., and southwards as far as 20° S. Outside this area, malaria is found nowhere except in Aneityum, which is only a fraction of a degree south of 20° S. The factors underlying this peculiar distribution have still to be ascertained. In the entomology of the New Hebrides the morphology and larval characteristics of *A. punctulatus* take a premier place. A large amount of work on the bionomics of the Culicidæ of Samoa has been done, especially on the irritating insect known as *Aëdes kochi*, and upon *Aëdes variegatus*, the chief vector of filariasis in Polynesia. Fine line drawings illustrate this portion of the report, and beautiful photographic plates of the breeding places of this insect are included. An account of intricate work directed towards evolving means for reducing the prevalence of this mosquito occupies over 100 pages of the report. Dr. Buxton's efforts have greatly extended our knowledge of this particular mosquito. We look forward to the appearance of future volumes which will contain the results of his pathological observations.

EVOLUTION OF PREVENTIVE MEDICINE.

By Sir A. NEWSHOLME, M.D. London: Baillière, Tindall and Cox. 1927. Pp. 226. 11*s.* 6*d.*

IN this interesting book the civil servant's urge to present exact facts is tempered by the scholar's delight in his subject, as when the author tells the history of plague with regard to a dawning appreciation of infection. We learn how in time of food scarcity, in 664, God was solicited in prayer to remove by some species of pestilence the burdensome multitudes of the inferior people, and of how the pestilence came, but fell alike upon the authors of the petition and the lower orders.

The evolution of preventive medicine is here traced from belief in supernatural causation of disease to knowledge based on ascertained facts. Error and truth, we are shown, often struggled together, the weight of accepted authority usually tipping the beam. But little over a century ago progress had hardly emerged from the twilight of futile libations, amulets, charms, and witchcraft. Differentiation of the infective fevers had hardly commenced and all were vaguely, but not unwisely, ascribed to filth. Cleanliness of person, of food-supply, and of home, banished the louse, excremental contamination, and the flea, and with them typhus, typhoid, and plague; even though early sanitarians wrought better than they knew. We are well reminded of the debt we owe to Harvey, Sydenham, and Jenner, and to men like John Snow and William Budd, to Chadwick and Southwood Smith, to Farr and Simon; each in his day fought and won an uphill fight for dawning knowledge against apathetic prejudice, and we who therefore live in a sanitary age find it hard to appreciate how life was lived when ordure was flung into the reeking streets, when no water in a town was safe to drink, when only 250 out every 1000 children born attained the age of 5 years. The author shows good reason why he is no mere *laudator temporis acti*. It is good for us to accompany him when he tells what we owe to Wendell Holmes and Semmelweiss, to Pasteur and Koch, to Takaki and Manson, and to bow our heads in thanks that these and others tilled the land where we reap the harvest of health. A second volume is promised dealing with more recent advances.

THE HARVEY LECTURES, 1925–26.

The Harvey Society of New York. London: Baillière, Tindall and Cox. 1927. Pp. 229. 18*s.*

THE Harvey Society of New York, which exists to promote lectures by eminent laboratory workers on the scientific branches of medicine, publishes every year a collection of the most valuable of the papers read before it, and most of the greatest names in research are to be found in its list of honorary members. The latest of these volumes illustrates the scope of its activities. The first paper, by Dr. F. R. Nager, of Zurich, surveys the recent progress of experimental otology, a branch of study which has been handicapped by the difficulty of obtaining reliable histological material. Dr. John Northrop, of the Rockefeller Institute, contributes a treatise on the dynamic chemistry of pepsin and trypsin digestion, and Dr. Warren Lewis, of the Carnegie Institution of Washington, an account of the metamorphosis of mononuclear cells into macrophages, giant cells, and epithelioid cells. The chemistry and physiology of the parathyroid glands are dealt with fully by Dr. J. B. Collip, of Alberta University, whose experiments have demonstrated the part played by these glands in phosphorus as well as in calcium metabolism. "Empiricism and Rationalism," by Dr. E. B. Wilson, professor of vital statistics at Harvard, describes the working of both these methods of ascertaining truth, and their significance to the statistician; his paper reminds the reader that columns of figures which appear so solid to the grasp are liable to disappear like mist under intensive criticism, and that the accurate summing-up of results or observations is a most complex task. The practical importance of statistical science as applied to medicine is well shown in the lecture, by Dr. Knud Faber, of Copenhagen University, on the progress of medical therapy. Statistics alone made possible the work of Pierre Louis in creating out of chaos many of the disease-entities which a century of medical practice have confirmed, and in establishing the probabilities of their cure by given processes. Dr. Faber points out that the statistician alone can give the research worker a gleam of hope that his results may be of real general value. The great advances of substitution therapy, serum therapy, and chemotherapy were made possible only after a definite disease had been discovered and experimentally reproduced, and after the observations of experiment or empiricism had been illuminated by numerical statistics. The seventh lecture is a contribution by Dr. B. Brouwer, of Amsterdam, to the comparative anatomy of the nervous system, in which he discusses the functions of the vital and non-autonomic sensory systems at various stages in evolution.

A society which can obtain contributions as important and diverse as these has an obvious value to medical science. Not only laboratory workers but all who are interested in the vast and patient work on which their everyday practice is founded will find in these lectures inspiration and encouragement.

LECTURES ON INTERNAL MEDICINE.

By KNUD FABER, M.D., Professor of Internal Medicine, University of Copenhagen. New York: Paul B. Hoeber. 1927. Pp. 147. $3.00.

IN reprinting the four lectures he gave in the United States last year Prof. Knud Faber has provided an exciting volume for physicians, house physicians, and all serious students of medicine. Is achylia gastrica the expression of an underlying gastritis? Is the anæmia of Addison merely one variety of a group of severe anæmias, all of which are of intestinal origin? Is there a form of alimentary glycosuria which is not diabetic, although accompanied by hyperglycæmia? In each of the three lectures which form the first three chapters Prof. Faber answers "yes" to all of these questions, and the instructed reader, realising the importance of these problems, will delight in the author's masterly defence of his thesis. The laboratory worker will also find food for reflection in the book. For each of these lectures raises points of doubt stimulating to the pathologist. To what extent may the cases of achylia here enumerated be accepted as absolute? Is the risk of post-mortem change definitely excluded in the microscopic specimens from which the evidence of gastritis was chiefly derived? Is it true that there is no absolute method of diagnosing pernicious anæmia from the blood-picture? And are the micro-methods of blood-sugar estimation as accurate as is here assumed? All these questions spring to the mind, and it is in the doubts which it arouses, as much as in the clearness of its exposition, that the book is a stimulating and delightful one.

LABYRINTHINE VERTIGO.

Les Vertiges Labyrinthiques. Par ANDRÉ MOULONGUET, Oto-rhino-laryngologiste des Hôpitaux de Paris. Paris: Masson et Cie. 1927. Pp. 165. Fr.18.

THE examination of the function of the vestibule and semicircular canals is highly intricate. Moreover, the development of experiments designed to elucidate their action, together with the clinical methods which depend on them, is so recent, that it is extremely difficult for the learner to obtain a good grasp of the subject. In this little monograph a very successful attempt is made to present the matter in a clear light. After a short chapter on anatomy, the physiology of the semicircular canals and of the otolith apparatus is described. There follows a practical section on examination of the patient, and a useful chapter on the differential diagnosis of labyrinthine from other forms of vertigo; and, finally, a helpful summary of the various aural lesions in which vertigo occurs. This is a thoroughly practical little book, which well repays study.

APPLIED PHYSIOLOGY.

By SAMSON WRIGHT, M.D., M.R.C.P. Humphrey Milford, Oxford University Press. Pp. 418. 15*s*.

Dr. Wright has given in this volume an account of those functions of the human body which are most commonly deranged by disease, and of the alterations that disease effect. Wherever possible the function, normal or abnormal, of any particular organ is illustrated by reference to the corresponding normal and pathological states in man.

Emphasis is laid in the preface on the importance of bringing the student of physiology early into touch with the signs exhibited by patients suffering from those derangements of function of which human physiology gives a ready interpretation. But while the reactions of man to changes in his environment are well shown, the comparative and physico-chemical branches of physiology are not neglected, and it is made clear to what extent the analysis and interpretation of some human pathological states is facilitated by their study, for example, in the conception of conduction with decrement in the various forms of peripheral neuritis. It seems questionable if any useful purpose is served by introducing into a work of this scope information dealing with problems so involved as that of the sympathetic innervation of voluntary muscle, and with results still lacking confirmation, such as those of Voronoff's grafting experiments in man.

We note misprints on page 211, where $\frac{100}{3 \cdot 5}$ should be $\frac{100}{15}$, and on page 304, where "impurities" should presumably read "impulses."

A large amount of valuable information, including the most recent additions to knowledge, is here condensed into a comparatively small space, and still the book remains readable. It should prove most useful to those reading for their primary F.R.C.S., final M.B., or for the M.R.C.P. Many figures are included, and references to important papers from which information has been drawn are appended to each section.

RADIOLOGY IN MEDIASTINAL AFFECTIONS.

Essai sur une Nouvelle Radiologie Vasculaire. By MANOEL DE ABREN. Paris: Masson et Cie. Pp. 214. Fr.38.

RADIOLOGY plays an important part in the diagnosis and treatment of mediastinal affections, and reveals more than does clinical examination. In recent years much work has been done on the radiological examination of the mediastinum, especially by the French school, and elaborate methods of measurements of the heart and great vessels have been evolved. Dr. de Abren deals chiefly with some modifications of these methods, and more particularly with the measurements of the aorta in health and disease. The author explains his technique and theories clearly, and the work is profusely illustrated with photographs, diagrams, and radiographs.

RENAL DISEASE.

Modern Methods in the Diagnosis and Treatment of Renal Disease. Third edition, enlarged and revised. By HUGH MACLEAN, M.D., D.Sc., F.R.C.P., Professor of Medicine, University of London. London: Constable and Co., Ltd. 1927. Pp. 135. 12*s*.

THE publication of a third edition of this monograph is an indication that the value of functional renal tests in the diagnosis and treatment of renal disease is becoming widely recognised. The tests described in previous editions have not been altered or added to. Prolonged use has proved their reliability and, properly used in conjunction with clinical examination, they are convenient and informative.

The chapter on treatment is the only part of the book that has been rewritten. In this section the discussion on diet is especially valuable. The author points out that there is no evidence that a moderate protein intake is a cause of nephritis or arteriosclerosis, and that the tendency to give a very low protein diet is in many cases wrong, because its debilitating effect may be worse than the disease itself. Even if there is considerable albuminuria it is a mistake to limit excessively the intake of protein for long periods, and when renal tests indicate a marked improvement of function in spite of the albuminuria, exceedingly good results may be obtained by giving a comparatively large amount of protein. It is, however, important to give fruit and vegetables with protein as early as the disease allows. The diet sheets for use in acute nephritis should prove very useful. The indications for and value of a salt-free diet and high-protein diet are also clearly discussed, and the chapter puts the treatment of renal disease on as firm a foundation as present knowledge permits.

This monograph gives the clinician a clear idea of the practical value of functional renal tests, and shows when and how they may be used to gain further knowledge when clinical observation has reached its limit.

ABNORMAL PSYCHOLOGY.

Readings in Abnormal Psychology and Mental Hygiene. Edited by W. S. TAYLOR, Professor of Psychology in Smith College. London: D. Appleton and Company. 1927. Pp. 789. 16s.

THIS is a psychological anthology of great merit. It is planned for students of general psychology, sociology, and education rather than for those who are intent upon a deep research into the subject of psychological medicine, but even the advanced psychiatrist will find it of value for its enormous bibliographical range. It deals shortly with crude mental disease and with academic psychology, and is chiefly devoted to a survey of those functional disorders of the mind which cause so much and such intense misery without incapacitating their victims from living in society. Every facet of these ills is treated very fully. The method has been to select for each section the extract from modern psychological literature in which the editor judges that the matter has been treated most clearly and usefully for the student. The choice has been made from a very long list of authors, which includes some of the first writers on this subject in the world. Janet, Rivers, James, Jung, and Morton Prince are liberally drawn upon. Moreover, instructors using the collection as a class text-book will be enabled to develop further what topics they wish by using the reference-lists which end each chapter. The result is a very fair survey of modern thought in the realm of functional abnormalities.

New Inventions.

A SIMPLE LIGATURE APPLICATOR FOR TONSILLAR AND OTHER DEEPLY-SEATED VESSELS.

THE apparatus consists essentially of a glass or metal tube of about four inches in length and a metal carrier, somewhat longer, with a notch at one end. The ligature, preferably of catgut, is doubled and pushed through the tube by means of this carrier (Fig. 1). The projecting loop of the ligature is then

FIG. 1.

secured by means of a pledget of gauze and the wire guide removed. One loose end of the ligature is then marked by means of ink or a knot in order to distinguish it. A half knot is then made in the other loose end and the marked one pushed through it. The half knot is then tightened (Fig. 2). We thus

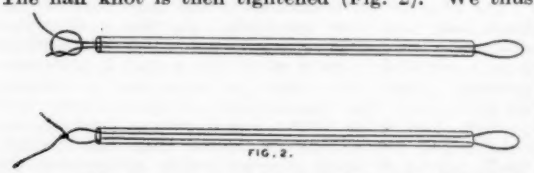
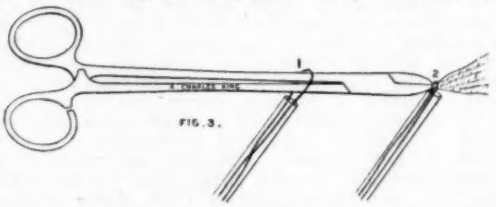


FIG. 2.

have a sliding loop round the marked end. The loop (which may be considerably larger than is shown in the illustration) is passed over the forceps with which the bleeding vessel has been clipped and pushed down by means of the tube till it encircles the vessel. If the marked external end is then pulled, the loop on it will pass down the tube and grip the vessel (Fig. 3 (2)).

As it will be found that the non-marked end should be about twice the length of the other, the "doubling" may be made at the junction of the first and middle thirds. The drawing down and tightening of the knot may seem to occasion an undesirable amount of friction on the vessel; it can therefore be closed up on the forceps until only a small loop is left to be slipped on to the said vessel (Fig. 3 (1)).

After numerous trials on a piece of gauze I tested it on the living subject, using catgut for the ligature of a vessel during a tonsillectomy. The ligature was effected without difficulty, and when I saw the patient four days later it held firmly even when I tried to pull it away with some force. This experience has now been frequently repeated. When a glass tube



is used we have the satisfaction of seeing the knot passing down it as well as judging by sense of touch.

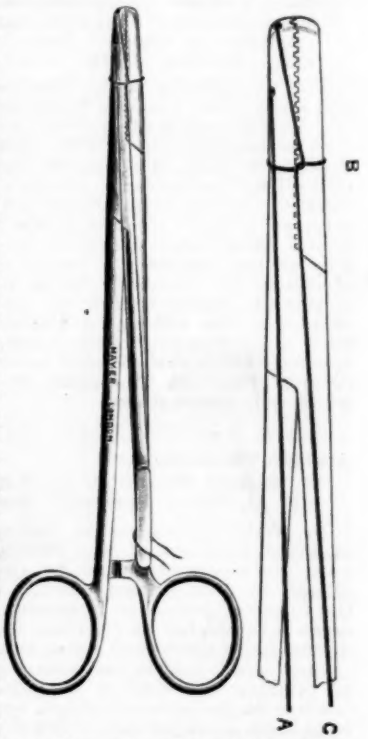
The slip-loop was first brought to my notice by C. G. Coakley, of New York, but the tube is my own idea, and, so far as I can see, is likely to facilitate the ligation of vessels in other regions as well as the throat, such as the upper part of the wound cavity in the dissection of malignant or tuberculous glands in the neck, and possibly also in operations in the thorax and abdomen.

The carrier and tube were made for me by Mr. Charles King, of Devonshire-street, London, W. 1.

JAMES DUNDAS-GRANT, K.B.E., M.D. Edin., F.R.C.S. Eng.

PRESSURE FORCEPS.

THE pressure forceps illustrated below, though designed for use especially in tonsillectomy, will be found useful wherever access to a bleeding-point is limited. The forceps consist of an ordinary straight pair, provided with a small, smooth hole in one beak as shown. The ligature is threaded through this hole and the free ends retained in the clip provided. Having secured the bleeding point, one end of the ligature (C) is withdrawn from the clip and passed around the shank of the forceps to include the other strand (A) of the ligature, making a half-hitch. By pulling on the strand retained in the clip (i.e., A), the knot (B) is drawn down to, and over the point of the forceps to encircle the tissue, forming, as it does so, a complete half-knot. The strand of the ligature



retained in the clip is then released and the forceps withdrawn altogether, or, if necessary, only partly when they may be used as a guide to a second knot.

I am indebted to Messrs. Mayer and Phelps, of New Cavendish-street, W., who have made them for me.

NORMAN M. EADIE,
House Surgeon, Golden-square Throat, Nose, and Ear Hospital.

THE LANCET.

LONDON: SATURDAY, OCTOBER 8, 1927.

THE UNIVERSITY OF LONDON.

SOME three months ago it was announced that the purchase of the Bloomsbury site by the University of London from the Duke of BEDFORD had been completed, £400,000 having been received from the Rockefeller Foundation, whose splendid services to metropolitan education will never be forgotten, and £125,000 from a special Government grant. The University thus enters upon a stage of development where not only will it be able to discharge its great work better, but where it can realise in a fuller manner the extensive promise of that work as implied by its title. The recent articles in our columns written by Mr. PERCY WALLACE, who was Secretary to the Senate from 1901 until 1923, supply a succinct story of the University. They explain the constitution and the machinery of working, and show how great a claim upon the sympathies, not only of the metropolis but of the Empire, the progress of the University should possess. This progress is necessarily regarded with particular attention by medical men, for the faculty of medicine is, within the elaborate construction of the whole, one of the most elaborate divisions, and no stress need be laid upon the high position which the medical degrees of the University take, and have always taken. At the same time the medical curriculum has been responsible for many vexatious dissensions in the history of the University, owing to the fact that medical education cannot be conducted without the intermediary of special schools and training which were not contemplated in the original ideals of the University. The existing constitution of the University is complicated, but it has been designed, with a reiterated amount of expert advice, to meet conditions of great difficulty, and now seems to be meeting them fairly.

What is being accomplished will be better understood if some of these difficulties are appreciated, as they are set out in Mr. WALLACE'S lucid statements. The University was founded originally as an examining body of an Imperial character, and its great default in respect of teaching in the metropolis began to make itself acutely felt some 45 years ago. The teachers of medicine of the metropolitan schools were in the forefront of the agitation for reform which then arose, because of the difficult position in which the London medical student was placed in respect of obtaining medical graduation. It is true that examiners appointed by the University were ready to pass for graduation such London students as satisfied their tests, but the University was in no general relation with the teaching of the students or with the organisation of the London schools at which the training was given. In 1885 the Royal College of Physicians of London and the Royal College of Surgeons of England approached the University with a suggestion for the recognition of their diplomates for a London degree. Nothing came of this, nor of a scheme by which the Colleges themselves should found a one faculty university, nor of one under which University College, London, and King's College, London, should form the nucleus of a new university, nor of a design for a new university to be established for London students, leaving the old university to discharge its Imperial functions. All these propositions were so open to criticism that their failure cannot be wondered at, despite the ingenuity and industry with which they were put forward; but at least they served a common purpose in showing how fundamental and widespread was the dissatisfaction with the teaching provisions of the University as it existed. In 1892 a Royal Commission on the subject was appointed—the second with a similar reference—and this body reported two years later, when its recommendations, which form the basis of the present organisation of the university, confirmed the substantial grounds of claims for reform. Under this report the University was divided into internal or collegiate students and external or non-collegiate students, and a set of statutes and regulations of great scope and particularity emerged from the Statutory Commission set up after the issue of the report. It is at this point that Mr. WALLACE has taken up the long tale in our pages, and has succeeded in explaining to the London student the present working of his own University, seen from the teaching aspect.

It can be understood that the promulgation of the statutes and regulations produced vast relief among all those who had rejected the various schemes of reconstitution, but no doubt the relief has been succeeded by some bewilderment owing to the complicated nature of the new procedures. Many earnest students of education have failed at first to recognise either the pattern or the objects in view, and the probability of confusion will be fully appreciated by those who read Mr. WALLACE'S description of the present University and of the machinery for its conduct; the embarrassments of the faculty of medicine will be understood as arising from the peculiar situation of medical students, who are alike "external" and "internal," the former because their provenance is world-wide, and the latter because their places of education as well as their examinational courses are subject to control outside the University's authority. It is not possible to admit medical students to graduation whatever the methods in which they may have prepared for their tests: medical registration is necessary for the legal practice of medicine, and is only granted as a result of standard examinations following upon a curriculum supervised by the General Medical Council. From this has sprung prolonged controversy. During the sad period of agitation to which we have referred, and of which a full history will be found in the pages of THE LANCET,[1] this is the fact which created obstacles that at one time seemed insuperable, if justice was to be done. A way out appears to have been found for a balancing of all claims while bringing the University of London into close relation with the teaching of medicine at the medical schools of the metropolis, and this without infringing upon the rights of those students which the University had in prime consideration at its origin. With the fundamental question of a central home settled, and with the wheels of activity revolving harmoniously, the outlook is good.

ERYTHEMA NODOSUM.

THE curious little outbreak of erythema nodosum, described by Dr. MAURICE MITMAN on page 751 of our present issue, recalls the work of ALFRED AUSTIN LENDON, of Adelaide, who in 1905, and again in 1925, adduced good grounds for renaming the condition "nodal fever." In a monograph published in London in 1905 he asserted that erythema nodosum is merely

[1] See, for a summary, THE LANCET, Sept. 3rd, 1898, p. 591 et seq.

the rash of nodal fever. To this disease he attributed a seasonal incidence in the spring, a highly inconsistent sex-incidence with a female preponderance, and an age-incidence well in keeping with other zymotic diseases. As a result of long personal observation of 62 cases in general practice he described the incubation period as about 14 days; the infectivity as mild; the prodromata as severe and precise, with invariable conjunctivitis, arthritic pain, and faucitis, and malaise approaching the early state of typhoid fever; the clinical course as resembling scarlet fever; a great liability to relapses; an anæmic and debilitated state in a long convalescence; and finally the rarity of second attacks. These views have never been generally accepted, and it is difficult to account for every case of erythema nodosum so neatly.

In reviewing the whole literature recently G. F. WALKER[1] has reclaimed LENDON'S work but has pointed out that the priority for the conception of nodal fever belongs to HARRISON, of London, who addressed the Dermatological Society in 1900 to the effect that erythema nodosum, and several other diseases such as herpes, are capable of sharper definition into acute febrile infectious maladies. WALKER has drawn attention to the persistence with which records appear of erythema nodosum attacking two, three, or four persons in the same environment, and also to two little epidemics, accounts of which have already been published. But his paper is also concerned, on the one hand with the final relegation out of clinical medicine of the supposed association between erythema nodosum and rheumatic fever, and on the other hand with the undoubted association between certain types of erythema nodosum and tuberculosis. The traditional association between erythema nodosum and rheumatic fever dates back to the writings of STEPHEN MACKENZIE in 1886. This association was not then shown according to modern standards, but though MACKENZIE'S original article does not contain one scrap of evidence whereby erythema nodosum can be placed in the rheumatic series as we understand the term to-day, yet his obsolete and fallacious conclusions have been solemnly accepted for half a century. Clinical evidence of the association is singularly lacking.

The story is very different when we examine the allegations of its association with tuberculosis; not without good reason did it receive the adjective "ominous." According to numerous records in European and American literature erythema nodosum enjoys a position of certainty as a herald of tuberculosis, and there are hundreds of cases on record in which it has been followed, sometimes rapidly, by pleurisy, phthisis, or the lesions of surgical tuberculosis. Two recently recorded fatal cases of erythema nodosum were found at autopsy to be cases of miliary tuberculosis, and tubercle bacilli and a tuberculous architecture have sometimes been found in the nodes. Bazin's disease, or erythema induratum, which is acknowledged to be tuberculous, usually starts as an indolent relapsing erythema nodosum. Among the more weighty recent communications on the association is the paper by R. MASSINI, of Basle, which was recently noted in these columns.[2] A complete survey of the incidence of erythema nodosum in tuberculous patients, and an examination of the strange selective nature of the disease, together with a solution of the problem of the odd sex and seasonal incidence even in frankly tuberculous cases, and an authoritative announcement of the real prognostic significance would be of considerable value. Sometimes urticaria has qualities which make it resemble erythema nodosum and the same may be said of erythema multiforme. Gummatous lesions and excretion rashes have likewise been confused and it is probable that a big node in erythema nodosum is occasionally incised because of its resemblance to cellulitis. Erythema nodosum is a manifestation rather than a sharp clinical entity, and should no longer be entangled with the ætiology and prognosis of the rheumatic series. Its occurrence should stimulate a search for a tuberculous lesion, whilst authentic evidence of the infectivity of the disease and examples of its exanthematous nature are always worth recording.

[1] G. F. Walker: Brit. Jour. of Derm. and Syph., 1927, xxxix., 241, 256.

[2] THE LANCET, Sept. 3rd, p. 512.

THE ROYAL ARMY MEDICAL CORPS.

IN the Students' Number of THE LANCET we stated a few weeks ago that the publication of the Royal Warrant of 1926 had removed many of the grievances of the officers of the Royal Army Medical Corps—grievances which had been pointed out frankly in our columns on many occasions. And we went on to recommend the Service as a career to young medical men. So that it has been a matter of regret to see the Service in certain places singled out for adverse criticism. Confidence has only recently been restored, and we think that those who are depreciating the opportunities of the young doctor who joins the Corps to-day have remained in considerable ignorance of what those opportunities now are, and any effect such words may have will be to retard an onward movement that is already taking place. It may be fairly expected that the Deans of the medical schools which are now opening for the October session will put the matter in the right light before their students. Young qualified men are showing a comprehension of the situation, for the competitive examinations for regular commissions, which had been in abeyance for some time, are now to be reinstated. The gist of the regulations for admission to the Service will be found in the Students' Number and in the "Conduct of Practice," while they can be obtained in full from the War Office; our advice to those who feel, after the study of the information, that a career in the Army would be an acceptable one, is that they should not delay to act. The rates of pay and allowances are good, the opportunities of post-graduate study are generous, and the work is varied and interesting; a quick decision to compete for a commission will have its reward in the acceleration of promotion.

Here are some points for the man to think of who is debating the matter in his mind. The improvements in the Service which have been made during the past 12 months in pay and general conditions of service are substantial, and the prospect of rapid promotion accompanies these changes. The pay and allowances of an unmarried Lieutenant now amount to approximately £511 a year, while a Captain, if unmarried, gets at present rates £617, and if married £709. The figures may not tempt those who think only in terms of the positions achieved by the most pecuniarily successful of the profession; but they will not be considered inadequate by those who feel that they are entering the Service from a deliberately exercised choice of the career with its many-sided openings. The rates of pay increase with promotion in rank and years of service till they reach the maximum of over £2000 a year, and in addition each year of service carries its element of gratuity or pension. The pace of promotion must be variable, but an officer is eligible

for promotion to the rank of Captain on the completion of three and a half years' commissioned service, and to the rank of Major on the completion of 12 years' commissioned service, provided that in each case he has passed the necessary examination and is recommended for such promotion. The recognition of merit as a factor for progress in the Service runs, it will be seen, throughout, for promotion to the higher ranks is by selection. The occurrence of vacancies must dictate the rate of promotion; but during the past year, we learn, 23 Majors were promoted to the rank of Lieutenant-Colonel.

One feature of the present conditions of service should be specially attractive to newly qualified practitioners. Those who take up a hospital appointment can, under certain conditions, get ante-dates to their commissions. In this way the time spent in acquiring the experience which comes from holding a hospital appointment will count as time in the Army. Hence the value of joining the Corps soon after qualification, so as to be quickly ripe for promotion, has no longer to be set against the value to a young doctor of holding house appointments; instead of these appointments being an indirect deterrent to advance by postponing entry to the Service, they have become a definite asset, while the ante-dating of the commission secures the young man from loss of seniority. The advantages of joining the Corps while it is short of junior officers are obvious, for it would seem that those who obtain commissions in it now cannot fail to find themselves in really responsible places while still in early middle life. And if they are minded to retire after seven years with the Corps, and while still at an age when many practitioners are just beginning to reap the fruit of their training, they will have earned a gratuity of £1000 to assist in their establishment of a civil practice.

A LEADER IN PHYSIOLOGY.

THOUGH currents of action in the heart were demonstrated as long ago as 1856, their systematic investigation did not come into the field of practical medicine until 1903 when the string galvanometer was first used to record them. This advance was due to Prof. WILLEM EINTHOVEN, whose death occurred at Amsterdam on Sept. 29th, and it was only one of many services rendered to science by this distinguished physiologist and physicist. Born at Samarang, in Java, in 1860, he was appointed professor of physiology at Leiden at the early age of 25, and spent the remainder of his life in this old and quiet city. Profound learning and elaborate research in time gained him world-wide recognition in various branches of physics, but his fame will chiefly rest on the cardiological work to which his later years were mostly devoted. The electrocardiograph as it is used to-day is of his devising, and the notation of its tracings—the well-known "P.Q.R."—is that which he suggested. The clinical application of his methods, notably by Sir THOMAS LEWIS in this country, has enormously enlarged our knowledge of the heart in health and disease, and EINTHOVEN well deserved the Nobel Prize for physiology and medicine bestowed on him for 1924. In the same year he was made an honorary member of the Physiological Society, and the respect in which he was held by English physiologists became personal as well as academic when he acted as their host on the Society's visit to Leiden. The latest of his English honours was foreign membership of the Royal Society, to which he was elected in 1926.

Annotations.

"Ne quid nimis."

THE NEW LIFE-TABLES.

IN this issue and the last we have summarised the contents of a volume containing the new national life-tables and the Government actuary's report thereon. This report is of particular value because Sir Alfred Watson's knowledge of and interest in the subject matter of his analysis are such that he has completely avoided any temptation to dwell mainly upon those technical aspects of construction and graduation which, interesting and important to professional statisticians and actuaries, are almost unintelligible to the average reader. Indeed, he has not disdained to point out that the real value of life-table constants which enjoy great popular prestige, such as the expectation of life, is restricted and that there are cases where to present the facts of mortality in life-table form at all has little to recommend it.

In general, the results of this analysis of *post bellum* mortality are gratifying. At most ages, especially in childhood and early youth, the people of England die at much lower rates than before the war. It may be that the stagnation—amounting to a slight backward movement in the data for women—between the ages of 20 and 30 is a war effect; in any case it is not very serious. After four years of desolating war and a great pestilence, in an epoch of industrial crisis and general disillusionment, judged by the test of mortality, we stand better than at the end of an epoch of peace and prosperity. It may be that there is some illusion in this. Few men in middle life or beyond it can altogether escape the feeling that life as lived now in England has a touch of unreality. It seems hard to reconcile it with the economic facts. How can it be that the citizens of a country supporting a fantastic burden of taxation, with a million workers idle and restricted markets, still on the average maintain life at a higher standard of comfort and even of luxury than a generation ago? Are we living in the shadow of some great disaster? The medical analogy to this economic impression would be a doubt whether morbidity, not yet reflected by mortality, is so favourable. Since morbidity cannot be measured with the unambiguous precision that attaches to mortality, the point must remain speculative. But, without passing beyond the circle of ascertained experience of mortality, there are some features brought out by Sir Alfred Watson which are not agreeable. Of these undoubtedly the most impressive are the regional differences. The comparison of the county boroughs of Northumberland and Durham with all England and with the rural districts of the eastern counties is an example. For every 100 of the males who reach 60 by the Northumberland and Durham experience, 141·8 attain that age in the eastern counties. Nor is this wholly due to the unfavourable conditions of life in infancy in the northern towns, for it appears that for every 100 males aged 20 who reach 60 in Northumberland and Durham, 125·5 will do so in the eastern counties. This is not wholly an occupational difference, since the figures for women also offer a contrast; using the last test—viz., the proportion of survivors from 20 to 60—the county boroughs of the north show 100 survivors compared with 115 in the rural districts of the eastern counties. We may pass over this with the remark:

> O fortunatos nimium, sua si bona nôrint,
> Agricolas . . . .

but it is hard to believe that in this small country there ought to be so vast a disparity. Favourable as is our mortality experience on the whole, such contrasts as these—which, by restricting the areas, might be made still more striking—show that there is still much to be done before the worst districts or occupations are raised to the level of the best.

SEX AND INTERNAL SECRETIONS.

THERE are good reasons for believing that the primary sex of an individual is determined by the constitution of the chromosomes of the egg and spermatozoon from whose conjunction it originates. Cytologically the whole of a woman is female and the whole of a man is male. In some invertebrates it seems that sex is finally and irretrievably fixed in this way. But higher animals have evolved a mechanism which is at once more complicated and more labile. If a mammal develops normally, the nature of the chromosomes determines the growth of the appropriate sex gland, ovary or testis as the case may be, and it is the internal secretions of these glands which determine those bodily and mental qualities which for practical purposes decide to which sex anybody belongs. Removal of the sex glands neutralises the individual; eunuchs are not feminine but infantile, ovariotomy leads to loss of sex, not to maleness. We have thus a primary chromosomal sex (male or female) and a secondary gonadic sex (masculine or feminine), and experimental surgery has shown that higher animals have so far escaped from the influence of their sex chromosomes that the primary and secondary sexes of the same individual do not necessarily correspond. For it is possible to masculinise a female by substituting testicle for ovary and to feminise a castrated male by implantation of ovarian tissue. The predominance of the sex gland is thus clear. But it is not final, and it may be influenced and indeed overridden by other circumstances, and particularly by the products of other ductless glands. Experimentally there is a variety of evidence. Prof. F. A. E. Crew, for example, has shown that feeding young cockerels with thyroid leads to feminine feathering while thyroidectomy causes the feathers of female chicks to tend towards the masculine type. But the most striking instance of such an influence is afforded by human pathology in the tumours of the suprarenal cortex which are associated with sex changes. The few examples which have been found in males have occurred in children who have shown a general excess in growth and strength (" infant Hercules ") and an extravagant precocity of external sexual development. Much more frequently these tumours have occurred in adult females in whom they lead to physical and psychical masculinisation. The realisation of the association, which we owe largely to Prof. E. E. Glynn, of Liverpool, has resulted in its recognition during life and in several instances to the happy removal of the tumour and a consequent restoration of femininity. The effects of operation appear to have made it quite certain that the tumours cause the masculinisation. They were described very clearly by Dr. Gordon Holmes and Mr. Percy Sargent in 1925 in a young woman of ample sexuality, and are brought out quite plainly in the case described by Dr. C. G. Murray and Mr. Graham Simpson in our present issue. In the other case, described by Mr. C. M. Kennedy and Dr. W. A. Lister, the patient unfortunately died before the results of operation could become manifest.

The explanation of this extraordinary phenomenon is very difficult. The tumours vary somewhat in detail; some are definitely malignant, some practically benign; some of slow, others of rapid growth. Histologically there is a general resemblance which in quite a number amounts almost to identity. There is little doubt that they all arise from the cortex of the suprarenal, and it is natural to suppose that they exert their influence by producing either an excess of the normal internal secretion of that organ or a secretion of abnormal kind. If the first alternative is correct, it ought to be possible to reproduce the condition experimentally, though we believe that the attempts to do this which have been made have so far failed. The second alternative recalls Prof. Glynn's remark that embryologically the suprarenal cortex is derived from the same source as the ovary and testis; it is possible that we have here a functional " reversion to embryonic type " familiar to the histologists. It is possible, too, that the adrenal sex effect is indirect through the medium, or with the coöperation, of the thyroid or pituitary. Polyglandular speculations are, however, premature. What is needed is the most careful and detailed investigation of such examples as may be discovered of the disease: in it medicine has made a most important contribution to the general biology of sex, and further study will no doubt illuminate much of what is at present obscure.

SILICOSIS IN DERBYSHIRE.

THE Derbyshire annual health report contains an interesting appendix on silicosis in the county by Dr. Patrick Hefferman, the tuberculosis officer. He defines silicosis as " a progressive fibrotic change in the lung tissue, due to the inhalation and deposition in the lung parenchyma of fine particles of silica, leading to the destruction of the functioning lung substance and its replacement by fibrous tissue. It is characterised, clinically, by steadily increasing dyspnœa, and by a tendency to develop and succumb rapidly to pulmonary tuberculosis in late middle life." Until quite recently the sharp spicules of silica were supposed to act by mechanical cutting effect. It is now established, he says, that the action is mainly a biochemical one, and that the silica particles, after being converted into a colloidal state, destroy the resistance of the lung tissue against the tubercle bacillus. Dr. Hefferman shows that the two most dangerous rocks in Derbyshire are the millstone grit and the ganister, both of which contain about 95 per cent. of free silica. Flint and chert are other rocks which consist chiefly of free silica and also concern Derbyshire industries. Chert, however, is only quarried in Derbyshire, and the greater part of the danger to workers is transferred to the potteries, where it is ground into fine powder. Flint from Northern France is used for the manufacture of white sanitary and table ware in the south of the county, and cases of silicosis due to this industry have been recorded at Burton dispensary. A fifth material dealt with in Dr. Hefferman's report is silica sand, which is found in pockets on the limestone plateau of West Derbyshire, and is used for brickmaking in the Bakewell district. Under the Workmen's Compensation (Silicosis) Act of 1918 the workmen in industries involving a risk of silicosis have to be examined annually and to be suspended from work and compensated if found to be suffering from silicosis or tuberculosis. Dr. Hefferman lays great stress on the paradox that " the grit-stone cutters, the traditional victims of the ' stonemason's disease,' remain outside the Silicosis Compensation Scheme, while the pocket silica sand brickmakers, with their low phthisis death-rate and their comparative freedom from silicosis, have been brought within the ambit of its provisions." The statistics collected by the late Dr. Sidney Barwise for the ten years 1901–10 demonstrate the very high death-rate from phthisis among the grit-stone workers. During the period 1910–20 there are indications of some improvement, although the mortality is still very high. On the other hand, Dr. Hefferman shows that, according to the popular belief, silica brickmaking is a healthy trade. In confirmation he has only been able to find one death of a silica brickmaker from phthisis during 1910–20 among 160 employed in the Bakewell district, whereas during the same period among about 350 grit-stone workers he found 19 deaths from phthisis, eight from pulmonary fibrosis, and one from hæmoptysis. His dispensary records have also shown that the cases of silicosis which occur among the brickmakers are nearly all in persons who have formerly worked as grit-stone dressers or quarrymen. The reason why pocket silica sand is less likely to cause silicosis than are grit-stone, ganister, flint, or chert is because each particle of silica is enveloped in a coat of clayey material. There are many suggestions as to how the clay acts as a

protection to the workers exposed to the dust, but one thing appears to be clear, that the presence of clay to the extent of 15 per cent. and of micacious matter to the extent of 7 per cent. reduce the amount of free silica in this sand to under 80 per cent.—the line of safety laid down by the Home Office. Dr. Hefferman suggests that more research is needed in this subject, and that if workmen cannot be protected from the inhalation of the dust, the treatment of the silicious material with a clayey substance may be useful. It is already recognised that the admixture of coal with the silica dust has a protective influence. We learn from the report itself that in 1925 the examination of workmen under the silicosis scheme was taken out of the hands of the tuberculosis officers and handed over to two whole-time medical officials specially appointed by the Home Office. Newly engaged workers, however, are still medically examined during the first month of their employment by the tuberculosis officers. The conditions of work and the nature of the dust in the atmosphere are also matters for the Home Office, whilst the occurrence of respiratory diseases, the clinical and radiographic records, and vital statistics are matters for the local health department and the Ministry of Health. Instead of getting nearer to the unification expected when the Ministry of Health was established, we seem in some ways to be getting further away from it.

ETHER CONVULSIONS.

THE occurrence of convulsions during the inhalation of ether was brought into prominence by an article contributed a few months ago to our columns[1] by Dr. S. R. Wilson, of Manchester, whose subsequent tragic death, while experimenting on himself with anæsthetics, has lent an added interest to the problems which he stated, although, it has also sensibly diminished the chances of bringing them to a definite solution. Convulsive muscular contractions during anæsthesia may be of various kinds, and before we can hope to determine the cause of the phenomenon in cases such as those cited by Wilson we must clear the ground by ruling out the categories of convulsion to which these almost certainly did not belong. Broadly speaking, there may appear in a subject under ether narcosis (1) fine tremors; (2) clonic contractions associated with alterations or peculiarities of position, common, for example, when the patient is quickly put into the lithotomy position; (3) convulsive movements associated with slight or with severe anoxæmic states. These are often most marked in the muscles of the face when the anoxæmia is slight, but they may violently affect the limb muscles as well as those of the trunk. When we are dealing with the observations of so experienced an anæsthetist as Wilson we may assume that the convulsions he described belonged to none of the three kinds just enumerated. If so this would rule out the explanation put forward[2] by Dr. J. T. Gwathmey, that the convulsions were the result of perivascular œdema and the accumulation of œdematous fluid in the alveoli of patients in whom ether has been administered without previous medication. The converse suggestion[3] made by Dr. R. W. Hornabrook, of Melbourne, that the convulsions were due to overdosage with atropine is rendered unlikely by the very large experience of preliminary atropine dosage without untoward event quoted[4] by Dr. H. Sington. In the same journal appears a letter from Mr. H. E. G. Boyle which bears upon the explanation maintained by Wilson himself; Wilson believed that the convulsions he described were due to impurities in the ether. Moreover, he showed how certain modern methods of using ether were prone to the formation of impurities in ether originally pure. Now comes Mr. Boyle's corroborative evidence that aldehydes and peroxides can be formed in good ether when nitrous oxide or oxygen or both are bubbled through it. It is to be noted, however, that the passage must continue for an hour or so and that the percentages of peroxide and of aldehyde found never exceeded 1 in 50,000 and 1 in 80,000 respectively. Wesley Bourne has shown experimentally that even $\frac{1}{4}$ per cent. of aldehyde produces only an insignificant effect, although inhaled for as long as three hours, and that with peroxides the percentage must reach something like 0·5 per cent. for effects to be anything but negligible. If, therefore, we are to accept Wilson's explanation we must assume that the impurities reached a remarkably high degree, or else that the condition of the patients rendered them unusually susceptible to the action of the impurities present. It is noteworthy that the patients whose fatal cases were related by Wilson were all the subjects of acute septic disturbance. This does not apply, however, to examples brought forward by other observers, or to the milder instances in Wilson's experience. We cannot, in fact, declare that the occurrence of convulsions during ether anæsthesia, not occasioned by anoxæmia and terminating fatally, is as yet satisfactorily accounted for. It is obvious, however, that to use pure ether and to keep it pure is a measure of safety, and it is something to have arrived at this certainty and to have disposed of the mistaken advocacy of certain impurities in ether which was rife only a few years ago.

[1] THE LANCET, 1927, i., 1117.
[2] Ibid., p. 1369.
[3] Brit. Med. Jour., Sept. 10th, p. 471.
[4] Ibid., Sept. 24th, p. 566.

URINARY NEUROSES.

IN a lecture published in *Medizinische Klinik* of Sept. 9th, Dr. J. J. Stutzin (Berlin) declares that a neurosis as such has nothing in common with a disease of the neuron or nerve. To obtain insight into the meaning and cause of the neurosis he takes the conception of an unresolved conflict with a consequent flight into illness, a conception which assumes the validity of certain psycho-analytical generalisations. With regard to organ-neuroses, he asks whether there is a specificity, by which a conflict of a certain kind finds expression in a certain organ, or whether the incidence of the neurosis is a matter of chance. He answers that anxiety, for example, tends to show itself in the form of increased peristalsis—he might have added in the form of palpitation and tachycardia—whilst disgust appears as vomiting; but repeated treatment of an organ can "neurotise" it, and in some personalities a specific organ-neurosis can be masked by the general neurosis or the neurosis can pass from one organ to another. Stomach, bowel, and heart neuroses are commonly described, but kidney neuroses find little mention, though Stutzin gives a few references to experiments showing the influence of emotion upon urinary secretion and describes a case, tentatively diagnosed as renal stone, in which an emotional state during cystoscopic examination was accompanied by painful acceleration of ureteric action which disappeared when the patient was pacified and engaged in conversation. The symptoms were judged to be psychogenic and treatment by psychotherapy proved successful. Among other cases described is one in which the patient had been operated upon for suspected renal stone, then for suspected gall-stone, and only when he demanded appendicectomy was he examined "neurologically" and found to be a psychoneurotic repressed subject who unconsciously sought a pleasure-equivalent in operations. Bladder incontinence or retention, originally neurotic, may be converted into cystitis by instrumental interference, and, on the other hand, post-gonorrhœal symptoms of disabling severity with associated suicidal ideas were abolished by an exploratory puncture of the testicle and the incision of a subsequent scrotal hæmatoma. This unexpected therapeutic success was excelled in the case of a man of 60, diabetic and with severe myocarditis, upon whom Steinach's rejuvenation operation was attempted under local anæsthesia. The incision of the skin caused such a severe shock that the operation was abandoned, but the failure was followed by a return of sexual vigour and enterprise, of an erect poise and

brisk gait, whilst after some weeks the man declared that his hair had become black; his wife endured a plastic operation upon the face in order to keep level with him.

Dr. Stutzin's paper draws together a number of clinical observations that can be paralleled in the experience of many genito-urinary surgeons, and he does good service in directing attention to the existence of these neuroses, which are so liable to pass unsuspected. A reference to the departed vogue of operation upon movable kidneys in neurotic patients would have added historical interest and pointed a moral. Taking a general view, he concludes by noting that we are turning aside from our over-estimation of laboratory results, but that much remains to be done before we shall be in a position to treat neurotic patients systematically, whether by suggestion or analysis.

THE CLINICAL USE OF IRRADIATED ERGOSTEROL.

WE have recently [1] commented on the discovery that irradiation of ergosterol provides vitamin D in a state of high concentration. This discovery has already been applied in clinical practice, and the *Deutsche Medizinische Wochenschrift* of Sept. 9th contains an interesting group of papers on the use of irradiated ergosterol in the treatment of rickets, late rickets, and osteomalacia. In most cases the dose given daily was from 2–4 mg., following the example of P. György[2] and of H. Beumer and C. Falkenheim,[3] but in one case as much as 10 mg. was given without any detrimental result. O. Rosenheim and T. A. Webster[4] point out that in the rat it does no harm to give a dose many times greater than the minimal effective dose, and this is evidently true for human beings, since calculating roughly by body-weight, compared with a rat, a dose of 2–3 mg. should be some hundreds of times larger than the minimal dose needed for an infant. The ergosterol was usually administered as a solution in olive oil, but cocoa-butter pastilles and sugar-coated tablets also gave satisfactory results. A. Hottinger reports that he cured a child under one year with 1 mg. daily, and children over a year with 2–3 mg. He also cured a young man with late rickets and a woman of 35 with recent osteomalacia with 3 mg., and two older women with severe long-standing osteomalacia with 5 mg. daily. C. Falkenheim had remarkable success with doses of 3–5 mg. in treating rickety children with severe complications such as broncho-pneumonia. He received the impression that the prognosis of the complications was greatly improved when the rickets was thus treated. He found X ray evidence of bone healing, even when the level of calcium and phosphorus in the serum remained unaltered as a result, he considered, of the complicating illness. W. Lasch and A. Behrens state that they cured rickets in five infants—which had developed the disease before their eyes in their own infants' home—with daily doses of 3–4 mg. of irradiated ergosterol. They think that the substance has a great future as a prophylactic, as its use obviates the loss of the mother's time involved in bringing her child for direct irradiation with ultra-violet light, whilst it has not the nauseating qualities attributed to cod-liver oil. W. Starlinger describes a striking cure, with 10 mg. daily, of a woman with osteomalacia. After three attacks in successful pregnancies she had become a complete invalid after the fourth pregnancy, and since 1919 had only been able to walk with the greatest difficulty. She had received a variety of treatment, including removal of the ovaries. After 12 days' treatment with irradiated ergosterol she suddenly began to improve, and after 20 days began to walk and progressed steadily thereafter. This group of papers is a useful instalment of clinical experience from Germany and Switzerland, and goes some way to demonstrate that irradiated ergosterol is as reliable an antirachitic agent as ultra-violet light or cod-liver oil, and in many ways a more convenient one.

[1] THE LANCET, Sept. 17th, p. 619.
[2] Klinische Wochenschrift, 1927, No. 13.
[3] Ibid., No. 17.
[4] THE LANCET, Sept. 17th, p. 622.

THE WEARING OF A TRUSS.

IN another column a correspondent, who signs himself "Senex," writes of the sorrows of the wearer of an imperfectly fitting truss. From the wealth of his own experience he talks quite frankly of the failure of the appliances provided to effect their object, due in his opinion to the lack of coöperation between surgeon and mechanician, and he comments on the lack of any hospital for hernia even in London and of the non-existence of surgeons specialising in the mechanics of the truss. There is, we must admit, more than a modicum of truth in our correspondent's criticism. Certainly at the City of London Truss Society the surgeons in charge personally fit the truss, of whose construction they have a real and intimate knowledge, but it is doubtful whether at the majority of medical schools even in London there is any consistent and definite teaching of the principles of truss-fitting, and in the case of the surgical aid societies it is the practice of the surgical staff simply to send their patients on to an instrument maker. The position is, in fact, analogous to that of the fitting of artificial limbs where, except at Roehampton, the instrument maker is in charge. At Roehampton, of course, it is the special limb-fitting surgeon who prescribes the limb, sees to its fitting at the various stages, and passes it when finished, with the result that nowhere in the world has limb-fitting reached such a high level. The time has probably come when the University of London might be asked to have a series of lecture-demonstrations on limb-fitting by the Roehampton staff. It seems clear that the principles of truss-construction and truss-fitting should be taught in every medical school, and if the demand should arise for a definite course of instruction on the part of newly qualified practitioners, no doubt the surgical staff at the Truss Society would be glad to arrange for post-graduate instruction. The matter is evidently worthy of closer study by educational authorities.

THE TAPEWORM'S HEAD.

THE treatment of tapeworm is useless if the head of the worm is not expelled. The starvation and purgation involved are exhausting to the patient, and if the first few attempts fail he is likely to continue his hospitality indefinitely rather than submit to further efforts to expel his guest. It is important, therefore, to get rid of the head at the first attempt. In a recent paper [1] Dr. T. B. Magath and Dr. P. W. Brown discuss the difficulties of treating tapeworm successfully, and describe a routine which they have found successful. The patient should not take dinner or supper the day before treatment, but black coffee, tea, and water may be drunk freely. At 6 P.M. and again at 6 A.M. 15–30 g. of magnesium sulphate are given. No breakfast is allowed, but after the bowels have been opened 30 c.cm. of the following emulsion is administered: oleoresin of aspidium, 6 c.cm.; powdered acacia, 8 g.; distilled water to make 60 c.cm. One hour later a second dose of 30 c.cm. is given. After two hours 30 g. of magnesium sulphate are again given, and two hours later a large soap-and-water enema. The patient then passes a stool which is sent straight for examination. The top watery part may be poured off and the rest is passed through a sieve with a 20-mesh bottom. The contents of the sieve, which are now chiefly worm, are emptied into a flat enamel pan, the bottom of which has been painted black, and the head is looked for. As a result of this treatment the head was recovered in 10 out of 19 cases at the first attempt, and in two others at the second. The seven failures were due to patients vomiting the drug or to contamination of the stool with food débris.

[1] Jour. Amer. Med. Assoc., May 14th, p. 1548.

In particular, it is stated, fruit should be avoided before the treatment. If the drug is vomited it may be given by a stomach-tube. Castor oil must not be given as a purgative, for aspidium is soluble in it and is then highly toxic. This routine, in the authors' hands, certainly seems to give more successful results than those usually obtained. They point out that to give an enema at the end is extremely important, for often when the worm is dislodged the head breaks off and passes into the colon, where it remains unless swept out by a large enema.

EXTRAMEDULLARY BLOOD-FORMATION.

ANÆMIA is very common in infancy, partly because an infant's blood is especially vulnerable to the toxins of such diseases as gastro-enteritis, rickets, and syphilis, and partly because children have a relatively small reserve power of blood regeneration. Their tissues have not only to produce blood for the support of the organism, but also for its growth. Any extra strain upon them is shown by the appearance in the blood of embryonic cells which in the adult would be seen only in very severe stimulation or disease of the bone-marrow, and this makes the anæmias of infancy more difficult to classify than those of later life. For some time after birth, although the bone-marrow is the chief blood-forming organ, other tissues have considerable power of reverting to their fœtal power of blood-formation when called upon to do so. In the August number of the *Bulletin* of Johns Hopkins Hospital Dr. Dorsey Brannan discusses this question of extramedullary hæmatopoiesis and quotes many cases from the literature described under the names of von Jaksch's anæmia, pseudoleukæmia infantum, splenic anæmia, and pernicious anæmia of infants, in which autopsy revealed tumour-like growths of hæmatopoietic tissue outside the bone-marrow. In a case under his own observation the child was 7 months old and had a large liver and spleen associated with rickets and malnutrition. The blood showed anæmia of a secondary type with a great number of normoblasts and early myeloid cells, together with a few megaloblasts. Post mortem he found red tumour-like growths filling the hiluses of the kidneys and abundant red tissue covering the falx cerebri, these growths being composed of all the elements of hyperplastic bone-marrow with a great preponderance of erythrocytic cells. There was similar tissue in the thymus and lymph nodes, but the spleen and liver, both large and fibrosed, showed little evidence of blood-formation. Dr. Brannan also describes foci of blood-forming tissue in the broad ligaments and breasts of other children not suffering from anæmia, and a case of severe anæmia secondary to uterine sepsis and hæmorrhage in a woman of 27, in which evidence of extramedullary blood-formation was found in the liver, spleen, and broad ligaments. He considers that such growths of hæmatopoietic tissue are fairly common in some of the anæmias of infancy, and that they are the result of compensatory stimulation. They occur most often in the hilus of the kidney, but also in the broad ligament and in the breast.

WE regret to announce the death on Oct. 4th of Mr. Henry Brunton Angus, Emeritus Professor of Surgery in the Newcastle College of Medicine, University of Durham.

THE personal friends and colleagues of the late Prof. Adrian Stokes have decided to establish a permanent memorial to him. Its precise character will depend upon the funds which become available, but the object will be to endow medical research in some way. His personal friends are convinced that the establishment of a Stokes Memorial Fellowship or Studentship is the only type of memorial of which he would himself have approved. The funds will be controlled by Guy's Hospital Medical School, and subscriptions should be sent to the Dean.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CCXLIV.—THE TREATMENT OF INSOMNIA.[1]

II.—THERAPEUTIC MEASURES.

1. *Physiogenic Insomnia.*

THE treatment of insomnia dependent upon definite physical disorder is, in general, that of the associated disease, and most of the conditions are outside the scope of this communication. Continued pain, however, due to neuritis or neuralgia and resulting in protracted insomnia in unstable individuals may, if unrelieved, lead to a psychoneurosis or even a psychosis. Cases are not uncommon where the organic disorder having ceased to exist, both the pain and insomnia persist as hysterical manifestations. In the sleeplessness caused by definite pain analgesic drugs are indicated, such as acetyl-salicylic acid (5–15 gr.), pyramidon (4–8 gr.), veramon (2–3 tablets), novalgin (7½–15 gr.), or dialacetin (½–2 tablets); the latter is a most useful drug for pain combined with insomnia. If the pain is of a severe and temporary character morphine or the total alkaloid preparations, opoidine (⅓ gr.) or omnopon (up to ¼ gr.), may be indicated.

In all patients who complain only of sleeplessness, in whom no obvious physical cause can be found, it is as well for the practitioner to make quite sure at the outset that the symptom is not one of physiogenic origin. Dyspepsia and constipation as causes of insomnia may easily be overlooked; flatulence especially is liable to lead to delayed sleep. It is often worth while to try the effect of a carminative draught taken at bedtime. Minor circulatory disturbances—e.g., cold feet—may also be missed. In cases of high blood pressure the treatment is largely that of arterio-sclerosis—dietetic measures, moderate exercise, saline purgatives, and iodides. A dose of nitroglycerine at night is often helpful.

2. *Psychogenic Insomnia.*

Where the cause of the sleeplessness is of psychical origin the practitioner's first step, as already stated, is to ascertain all possible causes of mental discomfort—anxieties, &c. Elucidation of the mental factors, however, may take a considerable time, and prolonged psychological investigation and even psycho-analysis may be necessary; in the meantime the patient needs sleep. Much help can be given by trying to persuade him to adopt the right mental attitude to his symptom. Those who suffer from insomnia almost always exaggerate in their own minds the severe consequences of not sleeping adequately, a fact which adds considerably to their anxiety. The physician should point out to the patient that there is no fear of his losing his reason or dying as a result of his sleeplessness, that a smaller amount of sleep than most people take is quite compatible with health, and that rest in bed with muscular relaxation is to a certain extent a substitute for sleep. A correct mental attitude will assist greatly in relieving an anxiety state and combating insomnia; delayed sleep is often kept up by worry concerning it, the patient going to bed anticipating and dreading that he will not fall asleep. On the other hand, it is useless for him to try to make desperate efforts to go to sleep; as far as possible he should retire to bed in a tranquil state of mind, believing that sleep will come. Failing this, if he can be persuaded to show indifference to sleep, the insomnia will sometimes disappear.

In the subject of insomnia every effort must be made to raise the level of the general health by

[1] The first section of this article—General Considerations—appeared in last week's issue.

suitable feeding, warmth, and judicious exercise; the tendency to undue fatigue must be counteracted by a reduction of the daytime activities and the taking of short periods of rest, especially after meals. Cerebral excitants, such as coffee and tea, are best avoided in the latter part of the day. As sleep in many individuals is largely a question of habit, the patient should retire to bed at a regular hour each night and should avoid close mental work during the evening, or if this is impossible, he should take a short walk before bedtime. A warm bath promotes sleep in some cases, but has the reverse effect in others; it is, however, worthy of trial. In those who suffer from cold feet, a hot mustard foot-bath at bedtime is often helpful. It is unwise to go to bed on an entirely empty stomach, since it is generally accepted by physiologists that cerebral anæmia plays some part in the mechanism of sleep. A meal tends to produce drowsiness, blood being required in the splanchnic area for purposes of digestion, and this leads to a corresponding diminution in cerebral vascularity (compare the desire of most animals to sleep following a meal). For this purpose it is advisable to take warm soup, bovril, or cocoa with dry biscuits half an hour before bedtime.

The patient should have a bedroom to himself, which must be dark, quiet, and well ventilated. All clocks must be removed and the light turned off; if, however, the latter is impossible owing to the patient's apprehension, the light must be subdued by shading. A spring mattress is usually best, but much depends on that to which the patient has been accustomed. The bedclothes should not exceed the minimum quantity required for comfortable warmth, and in those sensitive to cold the bed must be warmed with hot-water bottles after a through airing in the daytime. As regards posture, it is generally preferable to try to sleep on the right side; in this position pressure by the liver on the stomach is avoided and it is easier for the latter organ to empty. The height of the pillow will depend largely upon the patient's habit, but in cases of increased blood pressure a high pillow is desirable.

Reading in bed sometimes promotes sleep, and some individuals habitually read until drowsiness compels them to extinguish the light. Unless the patient is accustomed to "read himself to sleep," it is best not to introduce the suggestion in case a habit of wakefulness be established.

Education in complete muscular relaxation is sometimes valuable. The faculty of muscular relaxation can be so developed that the patient is able to relax all muscles upon getting into bed, a habit that greatly favours the onset of sleep. General massage, with special attention to the spinal muscles, carried out shortly before the usual hour of sleep, is of great assistance, especially in cases of neurasthenia.

As regards alcohol, much again depends upon the patient's habits and how he reacts to alcohol. Stout or a glass of hot whisky and water at night will induce sleep in many individuals when everything else has failed; in others, however, it has but a temporary effect and may even cause wakefulness.

As suggestion—the hour of day, undressing, and the accustomed bedroom—probably plays a considerable part in the production of sleep in adults, it is generally best to try to treat insomnia in the patient's own home. In cases of long standing, however, a change of environment is usually desirable. The bedroom and surroundings may have lost their suggestive effect, and far from inviting sleep, actually repel it by the association of continuous nights of wakefulness. In the extremely rare cases of insomnia due to overwork in the absence of associated worry, or in which the anxiety is of a superficial character, a holiday may speedily effect a cure.

Hypnosis has often been advocated in the treatment of insomnia. In the writer's experience neither simple suggestion without hypnosis nor post-hypnotic suggestion is very satisfactory. In suggestible subjects a temporarily good result may sometimes be obtained, but even such cases quickly relapse in the absence of more radical treatment. In other cases no effect is observed.

Cases in which the sleeplessness is of long standing and has resisted the simpler methods of treatment described, as well as those in which the symptom amounts almost to an obsession, will usually require deeper and more prolonged psychological investigation—psycho-analysis or one of its modifications—to obtain a satisfactory result. In such cases the younger the subject the better the prognosis, while after middle age psycho-analytical methods are unlikely to benefit.

It is almost needless to state that it is far better to treat the cause of insomnia rather than the symptom of insomnia itself. In psychogenic cases, however, this may occupy a considerable period, and in the meantime, pending the result of psycho-therapeutic and other measures, the patient must have sleep. Although the routine use of hypnotics is indicated only in exceptional cases, it is unjustifiable to withhold such sedatives owing to the often groundless fear of habit-formation on the part of the patient; the insomnia, indeed, is far more likely to become a fixed habit and the patient is usually only too glad to discard the hypnotic. Also, in many cases, if sleep be induced even by artificial means, a definite psychosis may be averted.

Hypnotics.

In prescribing a hypnotic one cannot afford to fail, since the patient may be left in a worse condition than before; consequently, it is wise to begin with a substance and a dose a little stronger than is really necessary. In mild cases simple bromides or "sedobrol" may be used, but the bromide-urea compounds—bromural (5–10 gr.) and adalin (10–15 gr.)—or dial (1½–3 gr.) are often more efficacious; the latter is very safe and sure and has no unpleasant after-effects. Of more potent sedatives, the veronal group—especially medinal (sodium-veronal) in 7–10 gr. doses—are very satisfactory; it has been shown that these drugs in *therapeutic* doses have no toxic effect upon metabolism and no cumulative action. Paraldehyde is too unpleasant for general use, but is helpful in alcoholic cases and in pneumonia, while chloralamide is too uncertain in its time of action. On account of its delayed effect, trional (10–20 gr.) is indicated in internocturnal insomnia, in which the patient is awake only in the latter part of the night. Sulphonal (10–30 gr.) suits some individuals, but is generally inferior to veronal and medinal, while luminal in hypnotic doses is undesirable. Morphine should not be used in insomnia of psychogenic origin outside a mental hospital. In practice it is usually best not to continue a hypnotic longer than two or three weeks without an attempt at a gradual reduction in the dose employed. In the later stages, with the patient improving, the sedative may be varied from time to time, with a slight reduction in dosage on each occasion a hypnotic previously used is again prescribed. A hypnotic by the bedside of the patient to take if necessary is often successful and he may sleep night after night without needing it.

In the acute psychoses of which sleeplessness is so common a symptom, the use of powerful sedatives (the so-called "chemical restraint") is becoming regarded with increasing disfavour. Endeavours are being more and more directed towards assisting nature to bring about relief by careful nursing and general treatment—attention to the digestive and excretory functions, frequent baths, and the administration of alkalis. Attempts to promote sleep are also made by warm sponging, hot packs, and continuous baths. Hypnotics, nevertheless, are often necessary, but should be used judiciously and as sparingly as possible.

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Opening of the Medical Schools.

THE MEANING AND METHODS OF SUCCESS.

An Address (Abridged) delivered to Students of St. George's Hospital on Oct. 1st, 1927,

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EVERYONE at some time or another must ask himself the questions whether or not and how he can attain success; these problems, though visualised, should not weigh too heavily or constantly on the mind, for sufficient to the day is the burden thereof, and if this is well borne the future may be trusted to look after itself. No one, however confident or diffident, can tell what is in store for him or command success, but he can do better by deserving it. The vagaries of blind fortune, the chances of injury and illness, and more particularly the student's character still in process of formation, as much or more than ability and industry, are in the main the determining factors.

The average student is usually too busy with hard work and healthy play to think much beyond the goal of passing his examinations so as to be able to earn a living, or, if an old-fashioned hero-worshipper and vaguely ambitious, of following in the steps of a teacher; it is therefore perhaps not surprising if he seldom stops to analyse solemnly what exactly constitutes success. Yet surely it is desirable for his present guidance to formulate some conception of his ideal of a medical life.

Estimates of success have been made by Sir James Paget (1869), Sir Squire Sprigge (1906), and Mr. E. Corner (1920) on the basis of the only available material data—namely, attaining certain positions in hospital and private practice. These statistics brought out at different times are satisfactory, for they show that on an average 75 per cent. of medical students qualify, and that of those who start in practice 66 per cent. have reason to feel justified with their choice. But apart from freedom from anxiety about the means necessary to provide for dependents and to live in fair comfort, what are the essentials of a right conception of success in medical life?

Forms of Success.

There are many kinds of what may be called success—the fashionable and financial, the intra-professional, the scientific and intellectual, and the humanitarian. The obvious hall-marks of success in the popular view are, of course, a large income and a title; in all walks of life these certainly point to achievement and must not be gainsaid or their value minimised. But they may be and often are due more to commercial astuteness than to those finer qualities of sympathetic imagination and unselfish wisdom which go to make up the character of the ideal healer. It must not, however, be assumed that the combination of the best success is incompatible with, or so often divorced from, the financial as those without experience of either may believe.

Another and a potentially wider conception of success is to get what you want, be that what it may—riches, fame, affection, troops of friends, so that all men speak well of you. But as this, like the previous form of vaulting ambition, may in George Moore's words, become

> "Like Dead Sea fruits, that tempt the eye
> But turn to ashes on the lips,"

and, bearing in mind Oscar Wilde's epigram that "there are two great tragedies in life, not getting what you want—and getting it," the definition should be expanded into that given by Osler, "getting what you want and being satisfied with it." Many agree with Robert Louis Stevenson that "To travel hopefully is better than to arrive, and the true success is in labour."

A high ideal is to make some great discovery or reform that permanently benefits mankind, to relieve, or preferably prevent, human suffering, and so to leave the world better than it was before. Some of these original investigators, inventors, and reformers have not been properly recognised during their lifetime and so, because the world was not then ready for them, must have appeared to be failures, but—

> "Not all who seem to fail have failed indeed,
> Not all who fail have therefore worked in vain,
> For all our acts to many issues lead."
> —*M. I. Fortescue-Brickdale.*

This most enviable ability for original discovery is given to few, but there is another form of success within the reach of ordinary mortals, not indeed as the outside world understands and uses the word, but from the individual's own point of view: it is to preserve your own peace of mind and respect by the consciousness of honest work well done, and duty carried out without fear or favour, in making others better and happier in body and mind, and by freedom from discomfort and regrets for any action mean and contrary to the golden rule to "do unto others as you would they should do unto you."

Methods of Attaining Success.

To follow the wrong profession is a tragedy and a sure bid for unhappiness and failure. But when what seems to be the right choice has been made, what are the further essentials? Obviously to start with, as in other professions, a thorough knowledge of the science and art—the two Janus-like faces—of medicine; and not only this, but to remain throughout life students, ever on the look-out to observe and learn, for there is no trace of finality about medicine, especially in these days.

Mental ability alone is not sufficient, though it goes a considerable way towards professional success. "A physician," said Osler, "may possess the science of Harvey and the art of Sydenham, and yet there may be lacking in him those finer qualities of heart and head which count for so much in life." Peter Mere Latham, one of the great clinical physicians a century ago, when our science and art were infinitely less detailed and specialised than now, wrote:—

> "Knowledge may be an incumbrance as well as a help. Many men know more than they are able to wield. There is a point (I believe) in the acquisition of knowledge (and this point varies infinitely in different individuals) beyond which, if more be acquired, the whole mass becomes useless to its possessor. I am acquainted with men who never have *done*, and never can do anything, because they know too much; and I am acquainted with men possessing comparatively small knowledge, so dexterous in its use that they have ridden over the heads of others far, very far, their superiors in acquirements."

Though reading maketh a full man, too much may induce mental dyspepsia, breed excessive obedience to authority, and so destroy any originality and independent thought. Read we should, but let it be methodical, with discretion, and accompanied by critical analysis and digestion, so that the state of the stuffed Strasbourg goose be not the result. As a practical method of analysis, a written abstract made at the time serves a double purpose; not only does it impress the details on the tablets of the mind much more effectively than mechanically underlining the book when sitting in an easy chair, but is most useful for future revision. It is a common mistake to measure the amount of work by the clock; the real criterion is not the number of hours spent, but the degree of concentration brought to bear on the subject. Concentration produces the greatest effect in the minimum time and is the economical secret of the successful and busy man.

There are in addition other factors to be considered, especially a knowledge of men and womenkind which is so important in the treatment of the sick. Though, like most epigrams, that to the effect that "one-quarter of savoir and three-quarters of savoir-faire make the successful practitioner" may be an exaggeration

there can be no doubt of the value of the personal equation in gaining the confidence of patients, their relations, and professional brethren. A man should, of course, have the requisite professional knowledge, but he must be able to make full use of his acquirements. This necessary personality is not shown by a bedside manner with a suggestion of pompous superiority; it is the result of getting inside the patients' minds so as to think their thoughts, feel their feelings, and thus understand their mentality and anxieties so thoroughly that the medical man is obviously their friend with their interests so entirely at heart that nothing else counts. This is not an actor's mask, but the outward and visible expression of true charity and forgetfulness of self. I would like to subscribe to the following from an address given by my father in 1874, when distributing the prizes at St. Mary's Hospital Medical School:—

"I believe that the rule 'put yourself in his place,' based on what modern philosophers call the principle of altruism, but what is found expressed plainly enough in much older language than theirs, is the rule which, if I were confined to the choice of one single guiding maxim to be given to a young doctor just entering upon the responsibilities of practice, I should choose for that maxim. Sympathy is truly called a divine gift, and it does assuredly give a superhuman power. I presuppose, of course, patience in investigation and carefulness in ratiocination; but such is often the obscurity, intricacy, and complexity of a medical problem, that in the ultimate resort, it is upon intuition rather than upon syllogism that its true solution depends. It is to the man who has the touch of genius, that strength of imagination, which enables him to put himself in the patient's place and thus do full justice to him that there 'ariseth up light in the darkness.' It is for want of all this that 'great men are not always wise.'"

The faculty of inspiring confidence, like the love of children and dogs, may be inborn, for there undoubtedly are men highly esteemed and of acknowledged ability but whom none of their friends think of employing professionally. A want of appreciation of his patients' state of mind, which is naturally focused on their ailments, may allow the doctor to discourse on his hobbies and private interests; whereas from his patients' point of view his raison d'être is solely to discuss their urgent needs. No doubt attempts to distract them from themselves have their place and value, but the time for this is after, not before, a full, often it must be admitted tedious, hearing and consideration of their troubles so as to unburden their minds and ensure complete satisfaction. In doing this there must be calmness without coldness, decision without dour dogmatism, friendliness but firmness. It may be difficult to steer between saying too little and talking too much, and while avoiding garrulousness there is the temptation to imitate those who by a sententious or somewhat cryptic phrase get out of a difficult situation for the time, but seldom satisfy their patients' wants. Honesty and truth are essential, but what may at the time seem the whole truth should not always, in the light of human fallibility and his best interests, be communicated to the patient. In making mistakes, as inevitably all must do, it is always better to err on the side of optimism than of pessimism. It was said of the late Sir William Osler that "he never left a sick-room without leaving behind renewed hope."

Relations with other medical men, popularly spoken of by the layman as medical etiquette or ethics, with a thinly disguised dislike and a suspicion of a mysterious trade-unionism, are in reality a very simple matter—obedience to the golden rule of treating other colleagues as we would wish them to treat us. In carrying out this elementary principle there is nothing more obvious than total abstinence from adverse criticism of other medical men. Before judging of what another medical man is reported to have done or said it is instructive to bear in mind how rumour may transform your own actions and remarks out of all recognition.

Importance of Good Health.

Almost as important as common sense and a sympathetic and healthy mind are good health and physique to withstand the strain of hard, continuous work. Doctors should not only advise, but in their own interests set a practical example in personal hygiene, proper recreation, exercise, and holidays in spite of the numerous difficulties that surround them. From insomnia, headaches, and dyspepsia born of irregular and hasty meals a man may become angular, forgetful, and deficient in the qualities which make for his success with trying patients. On the other hand, great things have been accomplished by medical men crippled or physically handicapped in one way or another; incapacity in one respect may, by compensation and concentration, result in a high degree of excellence in another direction.

Terence's line, *Homo sum; humani nihil a me alienum puto*, applies most certainly to our humanitarian calling; but although wide culture, literary activities, and hobbies are good for the soul, these are for private use and not for parade. There is widespread belief, often no doubt erroneous, that a man cannot excel in more than one line, and so when a doctor is known, for example, as a writer of verses, most people are inclined to consider him too good a poet to be their common-sense guide, philosopher, and friend in unromantic medical matters.

THE DOCTOR'S HIGH CALLING.

Being part of an Address to Students of the London School of Medicine for Women on Oct. 3rd, 1927,

BY R. G. HOGARTH, C.B.E., LL.D., F.R.C.S.,
LATE PRESIDENT OF THE BRITISH MEDICAL ASSOCIATION.

AN exclusively scientific training often leaves something to be desired in the way of mellowness and ripeness, and the professional man or woman of to-day suffers serious handicap unless his or her mind is well cultured, well garnished and sensitive to the impression of what the Greeks called "the beautiful." Energies should not be dispersed too widely, but narrowness must be avoided at all hazards. Medical text-books contain the rather arid knowledge indispensable for the satisfaction of examiners, but they are markedly deficient in the attractive graces, the freshness and the inspiration to be found in the best poets, essayists, and novelists. It is not enough for the woman doctor to be distinguished in the street by her spectacles, by her shoes, or by the attaché case in which she carries her instruments. Apart from her professional skill, she should be known by her culture, by her judgment and discernment, by her greater detachment from the idols of the market-place, and by that sure way of approaching a question at issue which is the hall-mark of the trained and balanced mind.

This is a golden moment at which to begin the study of medicine. The only time, perhaps, when the prospects of those entering the profession in the spirit of scientific adventure or with a real enthusiasm for the welfare of their fellows were in any degree comparable with the present, was in the early days of Greek culture, when Hippocrates first disentangled medicine from priestcraft. Medical science was then launched under the fairest auspices and with the brightest hopes, and mankind never suffered a more grievous calamity than when it drifted into the shoals and quicksands from which it was only effectually rescued in recent times. Medicine returning once more to Nature, rejecting all methods save that of observation, and all interpretation save that of strict causation by natural causes, has now gloriously renewed itself. Sure of its direction, it looks forward with great confidence to an ultimate control of disease. The profession, moreover, possesses to a degree hitherto unknown, the general confidence of mankind. Men and women in all ages have run with anxious faces to the doctor in the hour of trouble, yet the keener wits were never deceived by the professional cloak of mystery with which he shrouded himself. The reason of the present marked change

from credulous incredulity to implicit confidence is to be found in two words—scientific method. The temple of healing has been rebuilt from its foundations. The fountains of pure water have been cleared from the rubbish of centuries, and through its porticos and halls blows the fresh clean air of free inquiry. Scientists have indeed been driven to invent a jargon of their own, because they need such a bewildering multitude of new words with exact and precise meaning. But there is still only one set of scientific principles, and even in the labyrinthine complexity of modern medicine there is a grand and austere simplicity. The world may be able to afford the luxury of several religions; it can only afford one science of medicine.

This is the age of scientific adventure, but we are not all discoverers, and in medicine, as in other professions, the majority belong to the rank and file, who do the everyday mending and patching of common humanity. A vast routine of ailment, slight and serious, runs with the sun its appointed course. Men and women obstinately continue to transgress the laws of health and, in spite of daily articles on diet, there need be no apprehensions of any lack of patients. It is told of old Dr. Abernethy, that on entering his lecture room on an occasion like the present and observing a large influx of new students, he threw up his hands and said: "Good God! what is to become of you all?" And even to-day the pessimists lament that there are not enough good jobs to go round. But such dismal forebodings should not be allowed to depress natural enthusiasm. In no profession, I believe, is there so high a percentage of those who make a fair success out of their practice. Some 60 years ago Sir James Paget estimated that of those who actually reached practice, 66 per cent. made a very fair success of it, meaning by that that they were able to maintain themselves as professional men in adequate style. I feel sure that the percentage has risen of recent years, and in a specially marked degree as a direct result of the National Health Insurance Act which has proved a very good friend to the general practitioner. The State to-day not merely recognises but earnestly realises its direct responsibility for the health of the people, and association of the profession with the State will increase and not diminish, opening out an ever-widening horizon of honourable and profitable employment.

No doubt the majority of you will join, not the noble army of martyrs to the cause of pure science, but what I may call the goodly fellowship of practising doctors and surgeons. You will find even here scope for the exercise of all the altruism in your composition. I do not wish to pitch the note too high. It would be fantastic to pretend that doctors are immune from the ordinary failings of humanity. But I do think that their calling brings into continual play their finer feelings and instincts, and that doctors are specially sensitive to the call of duty. The medical art can do much and will do more, and you may be sure that, as you grow grey in its service, you will see it held in ever-increasing honour.

THE PATHS TO THE STARS.

"Macte nova virtute puer; sic itur ad astra."

Abstract of an Address to Students of the Middlesex Hospital on Oct. 4th, 1927.

BY VICTOR BONNEY, M.S., F.R.C.S.,
ASSISTANT OBSTETRIC AND GYNÆCOLOGICAL SURGEON TO THE HOSPITAL.

YOU students are like men about to march into a vast and unknown country. We older ones are like observers in an aeroplane who can see tracks through the dense forests, fords across the deep rivers, and gaps in the sheer ranges, which are invisible to the explorers on the ground. Viewed from the height that experience and detachment give, the main routes to success seem clear enough, though whether the observer, placed on earth again, could find them is quite another matter.

To fight the battle of life each of us possesses a host of higher cerebral cells, on the measure of whose efficiency and the degree of determination with which they are put into action success depends. The number of these cells in different individuals probably varies very little, and I believe that their quality is also much the same—geniuses and congenital idiots excepted; so that the results attained depend largely on the number trained for and put into active service, and, above all, on the force of the initiative that keeps them at work. Interest in a thing to be done is the driving power that puts the intellect into action. If aroused for the thing's own sake we call it aspiration; if for what the accomplishment will bring, ambition, so that to succeed it is necessary either to aspire or to be ambitious, or, as I think most successful men have done, mix the two in such proportion as you are able. The fundamental secret of worldly success is perfectly summed up by Kipling:—

> "And they asked me how I did it, and I gave 'em the Scripture text,
> You keep your light so shining a little in front o' the next."

Now some of the obstacles to success may lie with Time, Circumstance, or Personality, and by their nature be unalterable. Of circumstances, poverty is often held to be the greatest handicap, but I believe that it is the commonest mainspring of success, for a healthy man hates work and only extends himself under considerable stimulation, and of all incentives an empty pocket is the greatest. To those of you who have to start so I say that your chances of achieving great success are about three times those of your more opulent classmates. Personality, again, is a factor over which the individual has little control. In this matter the odds are on the big man. Size gives an impression of solidity and dependability extending to the mental equipment. I have known men who did handsomely on size alone!

To achieve legitimate success in any profession the first necessity is high technical ability, and, therefore, he who wishes to rise to pre-eminence must train the larger proportion of his intellectual units for that end alone. But if anyone thinks that great technical ability *by itself* is the usual agent whereby a medical man attains outstanding success, reckoned on its vulgarly accepted criteria, I must disillusion him. Of the impediments you will encounter only a proportion are strictly professional. Foresight, tact, and judgment are qualities auxiliary to mere professional skill, and without them you are unlikely to win through. You must therefore avoid excessive professionalism, and, by mixing on their own plane with all sorts of people, learn the follies and greatnesses of human nature, so that you can put yourself in your patients' shoes. It is in general practice best of all that the great quality of sympathy is acquired, and the man of understanding comes to realise how much more scientific it is to treat the patient than merely the disease.

Technical excellence by itself, though it rarely brings great success as the world assesses it, will in time bring a fairly good, and incidentally an honest living. Pukka goods will find a market sooner or later, even though they be ill-presented and poorly advertised. It is, however, possible to allot too many intellectual units to the acquirement of worldly knowledge, so that that foresight and tact may degenerate into calculation and subtlety. It may, of course, be urged that the proportion of professional to non-professional qualities in a doctor's intellectual lay-out should, strictly speaking, depend upon the character of the persons with whom he will have to deal, and that the mind of one whose clientèle consisted solely of university professors would require to be differently organised from one who had to deal mainly with those delightful people who are the mainstay of our weekly pictorial press.

I would remind you that success is not merely a matter of getting to the front but of keeping there; so that having, so to speak, carried the position a

man must have sufficient troops left over to maintain it. Once entrenched, however, behind a big reputation, a relatively modest intellectual effort is sufficient to hold your ground; and this is the truer the more important and elevated the position you have captured. Of material honours and distinctions in any profession or calling, it is the first that needs striving for; the second is always more cheaply bought; whilst when it comes to the fifth or sixth, it seems to be only necessary to sit still under the flowing stream of favour, and the rest is automatic.

I have called this address the Paths to the Stars, for there are many constellations, and we do not all seek the same one. Some are relatively near, and hence shine very brightly; others are so far away that their incomparable radiance can only be seen with the eyes of strong faith, so distant that man's life is all too short for the journey. There are various sorts of success, but there is only one which will win you the applause of our great profession—to leave it better, by your own efforts, than you entered it. The temple of medicine has been reared by innumerable workers, and of it certain great ones have erected whole halls and lofty spires by themselves. Emulate them if you can, but if it can be recorded that you built but one sound stone into the structure you will not be without everlasting honour.

And, finally, let me whisper in your ear that the policy of buying to-morrow with to-day is economically unsound, and remind you of the words of a poet who himself attained to immortality:—

> "Oh, talk not to me of a name great in story,
> The days of our youth are the days of our glory,
> And the Myrtle and Ivy of sweet two-and-twenty,
> Are worth all your laurels, though ever so plenty."

THE PROFESSION OF MEDICINE.

Being part of an Address to Students of the Westminster Hospital on Oct. 3rd

BY E. W. AINLEY WALKER, D.M., D.SC.,
DEAN OF THE SCHOOL OF MEDICINE, UNIVERSITY OF OXFORD.

I THINK it is no empty boast to claim that here in England the leaders of the profession have long been pre-eminent in the art of medicine; but it was not until comparatively lately that the application of pure science, and even of the biological sciences, to medicine received the recognition it deserved. In this respect there has been an enormous change in quite recent years, and it is now generally agreed that accurate scientific knowledge is the only valid basis for lasting success in the application of our art.

Whereas every day's experience in the practice of medicine must necessarily entail an unconscious steady growth, in skill, in clinical insight, and in power of management of the individual patient, an adequate knowledge of the fundamental sciences upon which all progress depends can only readily be acquired by close attention during the brief student period. The man who does not during this time obtain a thorough knowledge of the principles of the fundamental sciences, and some working acquaintance with the ascertained facts, will find himself, after 10 or 20 years of practice, so completely out of touch with the advance of science as to be quite at sea in the application of new facts and new methods. On the other hand, the student who trains himself thoroughly in scientific method has placed himself in a position to assimilate every new advance and to apply it to the benefit of his patient. For my own part I look forward to the time when every student will require himself to take a degree in pure science as a part of his medical studies.

I am becoming uneasy lest amid the multiplicity of subjects with which the student is now required to acquaint himself he may not get that sound knowledge of general medicine and surgery which remains fundamental to the education of the doctor. If we are to avoid disaster it must always be remembered that education is primarily a training of the mind. It is intended to fit the mind to apply itself to each problem that arises, whether that problem has been met before or presents novelty. It is not intended to convert the student at the moment of graduation into a walking encyclopædia of medicine, but rather to give him facility in the use of those faculties of observation and reasoning, and those methods of investigation which will enable him from the first to deal with the ordinary run of practice, to be competent in its common emergencies, not to make gross mistakes, and to know when he needs to seek assistance. Hence it is of the first importance that we should not mistake a smattering of information on an infinitude of little special subjects for an education that will fit men to become competent physicians.

It is on the scientific side of medical training that the greatest blots remain. I refer to the comparative neglect of the foundation of medicine—pathology; and the still graver neglect of the foundation of therapeutics—experimental pharmacology. In regard to pathology, there has been an awakening and the neglect is gradually being remedied, though the subject does not yet take that important place in the course of the ordinary medical student to which it is entitled. But the neglect of pharmacology is unfortunately almost unheeded, although on its experimental side the subject offers almost unlimited possibilities to-day. The enormous strides which have been made in our knowledge of organic and synthetic chemistry, and in our acquaintance with hormones, with internal secretions, with vitamins, and with other products of the activities of living matter, have opened a wide field for experimental and therapeutic investigation—a field which, because it has been neglected by the faculty, has rapidly become commercialised in certain countries with results that are, as I think, highly detrimental to real progress in the treatment of disease. It is hardly too much to say that a new kind of quackery has sprung up, which is all the more dangerous because it is the doctor rather than the public who is the intended gull upon whom vaunted but ill-tried remedies are daily being pressed in those futile piles of puffs and specious advertisements that fill his morning's post and crowd his breakfast table. On this account, if on no other, it is high time that due attention be given to the teaching of pharmacology.

Lastly, there is a pressing need for the fuller development of post-graduate study and the organisation of clinical research. After a period of practical experience many a man would welcome the chance of some post-graduate work as an opportunity of filling up the gaps, or of making further advance in some special branch, and I feel sure that if adequate post-graduate facilities were generally available in the schools, the great majority of medical men would sooner or later gratefully avail themselves of the opportunity of returning from time to time for the refreshment of their knowledge, the adjustment of their outlook, and the awakening of that renewed activity of mind that we call keenness, which results from contact with the work and spirit of a teaching hospital. The establishment of post-graduate teaching would infallibly lead to renewed activity in the field of clinical research, a department of medicine in which at the present time we seem to be making somewhat less progress, in comparison with other countries, than we have a right to expect. There is the less excuse for this state of affairs in that by far the majority of men of outstanding ability in medicine in this country go into clinical work. The explanation no doubt lies partly in the peculiar difficulties which beset clinical investigation, but to my mind it lies quite as much in the absence of that stimulus which in other departments of medical science is afforded by the presence in their laboratories of post-graduate pupils and research workers.

Clinical research is, almost necessarily, a more severe and arduous discipline than the general run of purely laboratory investigation. The laboratory worker is fortunate in that he is able to select his problem.

He can arrange its conditions, he can vary them at will, and he can repeat his experiment as often as he chooses, ringing the changes in this direction and in that until he is able to evaluate precisely the bearing of each factor and the meaning of the whole phenomenon under examination. The clinician, on the other hand, has to take his problem as he finds it, the conditions are set by nature, and she takes pleasure in subjecting them to all kinds of arbitrary variation; perhaps few, if any, of the factors may be under the control of the observer, and even the problem itself is often difficult to isolate and to define precisely. Yet every page in the history of medicine proves that all such difficulties can be overcome.

DENTAL RESEARCH AND ITS SERVICE TO THE NATION.

Abridged from an Address delivered at the Opening of the J. H. Hale Laboratory, Royal Dental Hospital, on Oct. 4th

BY SIR WALTER FLETCHER, K.B.E., M.D., F.R.S.,
SECRETARY OF THE MEDICAL RESEARCH COUNCIL.

AFTER congratulating the school on a successful year, and welcoming the new students, Sir Walter Fletcher continued:—

The special event of to-day is the first opening of the new research laboratories which have been built here by aid of a grant from the United Kingdom Dental Board. Their equipment and upkeep have been provided in chief part by the generosity of Mrs. Hale, who dedicates her gift to the memory of her husband, John Hampton Hale, formerly chairman of the hospital. These new laboratories are undoubtedly a valuable addition to the school, but the significance of our ceremony to-day goes far beyond that. The laboratories are an outward and visible expression, perhaps the first which the public have had an opportunity of noting, of a new and very striking movement in the dental profession. I doubt the general public having any conception of the new policy by which the dental profession are themselves directly supporting and promoting both education and research in their art and science. Under the United Kingdom Dental Board, every practitioner registered since 1921 pays not only a registration fee but also an annual fee, and as the register grows, the whole dental profession will be included as contributors. The fund already amounts to about £40,000 a year, and this is spent under the management by the Board in promoting education and research, and the public ought to notice and appreciate this most honourable and enlightened policy, at present almost unique in its kind. Dental practitioners are directly and with good will supporting a fund for promoting the two great movements that in a narrow view might seem to be most damaging to their immediate self-interest—education, bringing into the competitive field the ablest and best-equipped rivals, and research, of which the deliberate aim is to prevent dental surgeons so far as possible from having any work to do at all. Could there be a more notable example of public-spirited altruism? Now that the lead has been given by the dental profession, we may all wish that admiration by other professions of their movement may presently stimulate imitation. Supposing members of the medical profession each paid a small annual contribution in recognition of the privileges given them by registration, and that the fund so produced was devoted in the high spirit of altruism to the interests of the public by being used to promote improved and better sustained medical education, and in gaining improved medical knowledge through research! Do you realise that if each doctor in the United Kingdom contributed what each dentist now contributes, there would be a fund of no less than a quarter of a million sterling annually for medical education, whether undergraduate or post-graduate, and for medical research?

In framing their research policy the Dental Board have entered into coöperation with the Department of Scientific and Industrial Research, and for study of their special problems in mechanics, metallurgy, and refractory materials, have thus taken into alliance the whole system of scientific effort throughout the country with which that Department is in touch.

A coöperative alliance has also been effected between the Dental Board and the Medical Research Council in respect of research in dentistry upon the preventive and curative side. There are few problems of preventive medicine of more significance to the race, and not least to the people of our nation at present, than that of the proper development and preservation of the teeth. Every modern gain in our knowledge only serves to emphasise in some new way the scientific and medical interest of this set of problems. The Council I serve have recognised this from their beginning, and so far as their means allowed have lost no opportunity of assisting work in what is in many respects a peculiarly difficult field. They greatly welcomed the coöperation which the Dental Board offered them four years ago, and now the two bodies join together in financing the schemes of research recommended and generally supervised by an investigation committee upon which laboratory workers in bacteriology, biochemistry, and nutritional physiology sit side by side with clinical and anatomical observers under the chairmanship of that distinguished member of your staff here, Mr. Norman Bennett. My Council belief, and they hope the Dental Board also are satisfied, that by this partnership economy is well served and scientific efficiency increased. It will be our hope that the new laboratories we are to inaugurate to-day will play their own distinguished part in this coöperative scheme of investigation.

Who can doubt the value of this research work? It is now almost a commonplace to say that the improvement of the teeth of the nation is one of the most urgent of outstanding problems in prevention. Yet while we recognise this, it is useless and perhaps worse than useless to demand or expect quick and easy results from the investigations. Money is necessary to get freedom and opportunity for the right workers, and money invested in research rarely fails in the long run to give a high return of interest and often at an almost fabulous rate. But you cannot by merely putting money down either secure quick results or, indeed, command any at all. New natural knowledge cannot be bought; it is the product of the right man in the right place and of his unfettered labour. As Bishop Hall, of Norwich, said truly 300 years ago: "There was never good thing easily come by . . . God sells Knowledge for Sweat." Further, the endowment of research not uncommonly leads to a research after endowment. There are always those, whether trained or untrained, who are ready to undertake investigation in any direction without definite clue or clear objective. The true limit to a research programme is fixed not by the money at disposal but by the number of persons fit and available, and they will always be scarce. We must not only be patient in waiting for results but catholic in our scientific spirit. With a definite utilitarian goal before us, as here, that of preventing dental disorders, there is a common danger of expecting success from the frontal attack and of neglecting to observe and foster the progress of those who, perhaps in some quite different field of work, are reaching a point from which a flank attack may gain the whole position we are seeking. Nature's clues rarely lie in the straight line and the key to some great advance in dental knowledge may be lying implicit in studies that seem now to be quite alien. To those who can help us by some other road upon the flank we must be more encouraging than the Irishman who, when asked by a belated traveller the way to Roscommon, said: "Bedad, and it's a long way. If you're going to Roscommon you shouldn't be starting from here."

What has been needed, and what the committee have been giving their chief energies to obtaining, has been better knowledge not so much of dental

disease as of dental health; not so much of the specific diseases that may attack the teeth as of the conditions upon which their natural resistance to disease depends. Recent work in this country has drawn increasing attention to the exquisite elaboration of the minute architecture of the teeth, not only as it is built up when the tooth is first constructed for its long years of hard service, but also in the processes of its repair against later damage. Evidence has been accumulating that if this architecture be perfect, as it should normally be, the attacks of disease are prevented or minimised.

Recent work has been increasingly bringing dental problems into line with those of general physiology. The normal architecture of the teeth, like that of the bones and other organs of the body, depends upon the right supply and balance of particular parts of the diet during their growth. It seems that whether from the very intricacy of their wonderful structure or whether for other reasons the teeth in their formation are even more sensitive to nutritional conditions of given kinds than other parts of the body. Certainly we all know how often a human body, splendidly formed and functionally fit in every other way, is marred only by faulty teeth. Dental practitioners in the future may have new and wider service to give by aiding their colleagues in other medical fields to use the new and sensitive index to complete normality which the teeth in their formation and repair seem destined to provide. The progress made in these directions is full of hope because we seem to be in sight of new powers altogether, in the light of this new knowledge, and full of interest because at every step in the work problems of deep significance in biological science are being raised and illuminated. It has special interest, too, because the advances made here are all tending to bring preventive dentistry into new and closer relations to the general body of medical science. Solomon said in his wisdom: "Hardly do we guess aright at things that are upon earth and with labour do we find the things that are before us." Here and to-day in your new laboratory we dedicate a fresh enterprise in the long quest for knowledge: we shall pray that it may serve well the highest interests of your profession and bear its due part in winning more knowledge for the dignity and interest of mankind and more power for his help in this and other nations.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments have been made: Surg-Comdrs. R. J.G. Parnell to *Queen Elizabeth* and to *Warspite*, as squadron medical officer and for specialist duties on station (on transfer); W. N. L. Cherry to *Queen Elizabeth*, as Fleet M.O. (on transfer); and C. H. M. Gimlette to *Effingham*, as specialist in ophthalmology (on recommg.). Surg. Lt.-Comdr. A. W. North to *Titania* (on relief). Surg. Lts. P. J. A. the O'Rourke to *President*, for course of instruction, and to *Dolphin*; and A. E. Phillips to *Ambrose*.

ROYAL NAVAL VOLUNTEER RESERVE.

Proby. Surg.-Lt. R. A. Connon to be Surg.-Lt.

ROYAL ARMY MEDICAL CORPS.

Maj. F. R. S. Shaw (secd.) retires, receiving a gratuity.

Temp. Capt. W. L. Hay relinquishes his commn., and is granted the rank of Maj.

Lts. (on prob.) confirmed in their rank: W. G. S. Foster and W. F. Cooper.

ROYAL AIR FORCE.

Flight Lt. P. D. Barling is granted a permanent commission in this rank.

VOLUNTARY AID DETACHMENTS.

Substantial progress continues to be made in the organisation of Voluntary Aid Detachments, as part of the voluntary reserve of the Medical Services by the Crown, under the scheme which was launched four years ago with the approval of the Army Council. Detachments numbering 821 have now received official recognition, and their members number 20,077. Of these 3180 have undertaken an obligation to serve at home or abroad in the event of a national emergency, while the others have agreed to do duty as they may be required within reach of their homes.

Special Articles.

REQUIREMENTS OF THE POPULATION IN MILK-FAT AND THE AVAILABLE SUPPLY.*

BY W. CRAMER, D.SC. EDIN., PH.D. BERLIN, M.R.C.S. ENG.,

RESEARCH ASSISTANT, IMPERIAL CANCER RESEARCH FUND.

THE work of McCarrison and the experiments which I have carried out with Drew, Kingsbury, and Mottram have shown that a diet may contain a sufficient amount of vitamins to prevent the occurrence of the so-called deficiency diseases, but may, nevertheless, be so poor in its vitamin content as to prevent an animal from maintaining its health. A study of the mode of action of the vitamins has led us to conclude that these substances have a specific stimulating action on certain tissues and organs in the body of the living animal. If this stimulus is not supplied in the food in adequate amounts the functional activity of these cells or tissues is impaired. The degree of impairment varies with the degree of inadequacy in the supply of the stimulus and with the length of time over which it is allowed to act. In this manner all degrees of deviations from health are produced by diets inadequate in their vitamin content. The mode of action of vitamins resembles in many respects that of hormones, and the term "food hormones" enables one to form a mental conception of the manner in which disturbances of health can result from diets showing varying degrees of inadequacy in their vitamin content.

In order to study these conditions it is necessary to work over long periods and on a population of animals bred in the laboratory from a known stock and kept under controlled conditions. It is thus possible to show that rats kept on a natural diet poor in vitamins, such as white bread, maize, and rice, will grow and breed and present an apparently normal appearance. But when compared with another population in which an ample supply of vitamins has been added to this diet, it will be found that on the poor diet they do not grow as well as on the rich diet, nor are they able to rear their young as well. Perhaps the most striking difference is that on the poor diet the older animals develop almost without exception an infection of the lung (septic bronchopneumonia), while on the rich diet this is a rare occurrence. Mellanby has recently confirmed this observation in experiments on dogs. As I have shown in previous publications, the literature contains ample evidence that similar conditions obtain in the human subject. In industrial schools apparent epidemics of pneumonia have occurred and recurred, before we knew of the existence of vitamins, in spite of the greatest attention given to housing. A revision of the diet in the light of our present knowledge of dietetics showed that in these schools the diet contained an inadequate supply of vitamin A, and when this error was corrected these apparent epidemics ceased. It is not unreasonable to suggest that the frequency with which broncho-pneumonia occurs in the children of the poorer classes is due to this dietetic error.

A study of the mode of action of vitamin A has afforded an explanation of this remarkable fact. Vitamin A has a specific stimulating action on the mucous membranes, especially those of the respiratory and digestive tracts. These are always in contact with bacteria, but in perfect health the bacteria are not enabled to infect these mucous membranes, because the secretion of mucus acts as a mechanical and possibly also a chemical defence against the

* A paper read before the Section of Physiology at the meeting of the British Association in Leeds.

bacteria. If the supply of vitamin A is inadequate the activity of the mucous secreting cells is impaired; they become atrophic, and then the bacteria are enabled to penetrate into the mucous membranes, and produce varying degrees of infection of these tissues. These infections may remain localised for a long time in the affected mucous membranes or lungs and produce apart from the local disease a general toxæmia. If sufficiently prolonged bacteria pass into the blood stream, exhaust the humoral defensive mechanism, and set up an infection elsewhere or even a mild septicæmia. These effects are accompanied by changes in the blood, a thrombopenia and an anæmia. The importance of these findings lies in the fact that the mucous membranes of the respiratory and digestive tracts are the portals through which most bacterial infections to which we are prone enter. It is, therefore, in our power to increase by dietetic measures our resistance to such infections. These findings have been confirmed and extended recently by Koessler, Maurer, and McLoughlin,[1] who have also successfully applied these experimental results to the treatment of anæmias in man.

Another striking demonstration of the truth of these statements and of its applicability to man has been furnished recently by the important investigation of Dr. Corry Mann [2] on boys in an institutional school carried out under the auspices of the Medical Research Council and published by them. I cannot do better than quote from the official introduction to this report:—

"It is difficult to exaggerate the social value and the national importance of knowledge which may help to solve the problem of what diet in quantity and in quality provides adequate nutrition for the growing boy or girl. Adequate nutrition we take here to mean that which allows the full unfolding in growth of the best potential qualities, physical and mental, inherent in the child at birth. . . . The need for criteria of 'adequacy' in a dietary is felt most, of course, when circumstances demand economy in the choice of its constituents. It is a need, appreciated or not, for all classes of the community in different degrees. Unless the defects in nutrition which follow upon the use of a given diet are of an obvious kind, unjustifiable faith in the adequacy of a diet may easily arise. The supply of a dietary tends to become traditional and its efficiency unquestioned. Appetites may be apparently satisfied, and if the health and progress of individuals fail to reach a high standard the explanation is commonly sought in the factors of past history and inheritance as affecting children, derived for the most part from the lower social strata. Only close and discriminating study can decide between the influence of such factors and that of possible dietetic errors.

"The investigation shows clearly that the nutritive value of a dietary, which was originally chosen with every regard for the welfare of the children to be reared upon it, could be strikingly improved by additions which, in a quantitative sense, were small. It is startling to learn, as we do now, for instance, that the addition of one pint of milk a day to a diet which by itself satisfied the appetite of growing boys fed upon it, could convert an average annual gain of weight of 3·85 lb. per boy into one of 6·98 lb., and an annual average increase of height from 1·84 inches to 2·63 inches. This unmistakable betterment in nutrition was proved by trial to be due, not to the relatively small increase in the fuel value of the dietary, nor to the extra protein supplied in the milk, but rather to more specific qualities of milk as food. . . .

"It is of the first importance to notice that the improved gain in weight and height, taken as the measurable characters in this inquiry, were found to be accompanied regularly by improved general health and 'spirit.' If the nervous system of a growing boy is improved in its nutrition and tone, it does not follow that under ordinary conditions he will show better mental proficiency in school marks or better conventional behaviour. As Dr. Corry Mann observes, the boys who got the extra ration of milk and did best in weight and height were easily recognisable as 'obviously more fit than those of the other groups.' This was the testimony of all those who saw the progress of the inquiry. The improved 'spirit' of these boys led to their being more often in trouble for minor offences against order. No measurable indications were found of their having greater proficiency at school work, but this, in the absence of any modification of disciplinary or teaching methods, is not to be weighed against the general evidence for greater mental vigour. Common sense will always hold that high spirits are a sign of healthy boyhood, and that no dietary can be 'adequate' that does not permit their full development."

Another significant effect of the addition of milk is given in the following statement taken from Dr. Mann's report (p. 33):—

"During the winter of 1923–24 there was a complete absence of illness among the boys with the milk ration, although in other houses of the village the sickness-rate had been somewhat higher than usual owing to naso-respiratory catarrh (influenza), and to a limited outbreak of measles and scarlatina."

The observations made by Dr. Corry Mann on growing boys are thus an almost complete replica of our observation on animals, in which a similar result was obtained by adding substances rich in vitamin A and B to a basic diet otherwise poor in these vitamins. Although Dr. Corry Mann does not definitely state that he attributes the effects observed to the presence of vitamins in the milk or in the butter, which in another group was added to the diet with similar good results, an examination of his basic diet shows that it was poor in vitamin A and certainly not abundant in vitamin B. The main supply of vitamin A in the basic diet was represented by about 3–4 oz. of milk per head per day. In this connexion it may be stated, although it is obvious, that the vitamin A content of milk is not the only factor which confers upon milk its high dietetic value. Other factors are the high mineral content of milk which is of special importance to the growing organism and the presence of a protein (caseinogen) of high biological value.

As stated in the introduction to Dr. Corry Mann's report, height and weight are the only measurable criteria of dietetic efficiency. They are also the most obvious ones, and it is for this reason that the dietetic errors with which we are dealing here are most readily observed in children. But in so far as liability to infections of the mucous membranes and mental vigour are dependent upon dietetic factors, the adult organism is as much dependent upon an adequate diet as the growing one, and it would be a serious error to neglect the importance of an adequate vitamin supply for the adult organism.

In our experimental observations we have brought abundant evidence in support of the contention that an ample supply of vitamins is as essential for the adult organism as it is for the growing organism. We also wish to emphasise the importance of Dr. Corry Mann's observations upon the psychological effects of a diet inadequate in specific substances.

It is clear then that the living organism cannot attain its full development or maintain it without a supply of vitamin A very much larger than that necessary to prevent the specific deficiency disease or even any obvious forms of ill-health. Taking into consideration the dietetic habits of the population in this country, the problem of providing an ample supply of vitamin A in the diet resolves itself from the practical point of view into the problem of providing an ample supply of milk or butter. It is therefore a question of considerable importance to ascertain the minimum of milk-fat which ought to be included in our dietary and which may be taken as a measure of the requirements of man in vitamin A. The evidence bearing on this point is essentially circumstantial. One indication is given by the amount of milk consumed by an infant when it is weaned. This is 1 quart per day and contains about 40 g. of milk-fat. In an extensive investigation into the food requirements of children, Holt and Fales[3] come to the conclusion that the requirements in fat as such (not necessarily milk-fat) increase proportionately to the weight so that for every age the fat requirement is about 3 g. per kilo body-weight. Thus from the 36 g. of fat consumption of the first year the requirement gradually increases to 100 g. at about 10 years of age and rises even higher to 125–150 g.

[1] Jour. Amer. Med. Assoc., 1926, lxxxvii., 476; 1927, lxxxix., 768.

[2] Report of Medical Research Council, 1926. Special Report Series No. 105.

[3] Amer. Jour. Dis. of Children, 1922, xxiii., 471.

from 13–16 years. In the first year the fat-requirement is covered entirely by milk-fat taken in the form of milk. As the child grows older the fat requirement is covered partly by butter, and later also by animal fat and the milk consumption diminishes proportionately. It can hardly be doubted that where there is a free choice of diet the bulk of the fat requirement would be covered by the consumption of milk, cream, and butter. It has been stated already that the special value of milk to the growing organism lies not only in its vitamin A content, but also in its content of mineral salts, of which the growing organism is particularly in need.

In the dietary recently drawn up for a New York hospital for children [4] 1 quart of milk per day and 1½ oz. of butter are given as the daily allowance. This would represent a consumption of milk-fat of about 80 g. In a study of the dietary of an American public school Gephart [5] gives a daily consumption of fat of 200 g. per day per boy, which was covered almost entirely by milk and butter. Gephart describes the diet as ideal, and states that the place held by milk in this dietary is to be commended.

A measure of the amount of milk-fat required by an adult person may be obtained by determining the amount of milk-fat consumed by normal adults where there is a free supply of milk and butter, so that the consumption is not limited by economic considerations, but is conditioned merely by the normal appetite. From observations in a household where butter appears on the table at every meal, I find that the average consumption of an adult person is 1 oz. of butter and ¼ pint of milk per day. On looking up an old text-book of physiology,[6] written before the discovery of vitamins, I find in the dietary given as a specimen 1 oz. of butter and ¾ pint of milk per day. These figures again represent 40–50 g. of milk-fat per day. Widmark [7] gives 52 g. of milk-fat per day as the average daily consumption of milk-fat among the working classes in Sweden. In an interesting paper Widmark shows how, as the result of the Great War, a whole nation—Denmark—has been made the involuntary subject of an experiment demonstrating that the health of a population improves when the average consumption of milk-fat is kept above a certain level. This level Widmark finds to be 40 to 50 g. of milk-fat.

It is significant that all the evidence bearing on the requirement of milk-fat in the diet leads to a minimal figure of 40 to 50 g. per head per day, or in ordinary terms, a glass of full milk and an ounce of butter. If this figure is accepted as a basis, it is possible to calculate the requirements of milk-fat per annum for the population of this country. The milk-fat available for consumption can be calculated from the milk production in this country and from the import of butter. The amount of condensed milk imported has not been brought into the calculation, partly because its vitamin A content is often poor and also because in any case the amount of condensed milk imported is relatively so small that it does not seriously affect the conclusions which can be drawn.

The calculation is as follows:—

Requirements.

a Consumption of milk-fat per person per day, 40–50 g. Total requirements of population (43 millions) per annum = 628 to 785 million kg.

Available Supply.

b Home milk production = 1350 million gallons = 6142 million litres = 6327 million kg. milk = 253 million kg. milk-fat.

c Imported butter = 268 million kg. Imported milk-fat = 227 million kg.

b & *c* Total milk-fat available = 480 million kg. Available, if rationed, 30 g. per person per day.

a—(*b* & *c*) Deficit of available milk-fat = 148–305 million kg.

[4] Carr, W. L.: Bull. New York Acad. of Med., 1927, iii., 453.
[5] Boston Med. and Surg. Jour., 1917, clxxvi., 17.
[6] Stewart, G. N.: Manual of Physiology, fourth edition, London, 1900.
[7] THE LANCET, 1924, i., 1206.

The calculation shows that there is a considerable deficit of available milk-fat. Some idea of its extent can be gathered from the fact that the milk-fat available, if rationed equally, would give only 30 g. per head of the population. Since a large part of the population consumes its ideal minimal quota of 40–50 g., and a smaller part will even exceed it, it is clear that another large part of the population will have a consumption of only 20 g. of milk-fat and even less. Since this paper was read the annual report for 1926 of the Chief Medical Officer of the Ministry of Health has been published in which reference is made to the same problem. Sir George Newman states (p. 185):—

"The average daily milk consumption of the population of England and Wales has been estimated at about one-quarter pint per head, and in some populous districts is as low as 0·08 or even 0·06 of a pint per head."

Another point which should be noted is that only one-half of the available milk-fat is produced at home, the other half of the available milk-fat is imported from abroad. The countries mainly responsible for this supply are Australia and New Zealand, which supply one-third of the imported butter, and Denmark which supplies another third. I have no information whether the average milk-fat consumption in Australia reaches the ideal minimal ration of 40–50 g. per day per head, so that the exported butter would represent a surplus. For New Zealand I am indebted to the High Commissioner for New Zealand for supplying me with the following figures for the year 1924–25:—

Article.	Production.	Excess of exports over imports.	Amount available for home consumption.	
			Quantity.	Per head.
	lb.	lb.	lb.	lb.
Butter.. ..	181,657,666	140,549,771	41,107,895	30·34
Dried milk..	14,459,370	10,854,525	3,604,845	2·65
Preserved milk.. ..	5,261,648	1,666,382	3,595,266	2·64

The average daily consumption of butter in New Zealand per head amounts therefore to over 37 g. = 32 g. of milk-fat. This figure is actually higher than that postulated by us as the minimal optimum requirement of milk-fat consumed in the form of butter. Although the consumption of milk as such cannot be calculated from these figures they are sufficient evidence to show that the people of New Zealand are covering their minimal requirements in milk-fat before exporting any of it, so that their exports represent a surplus. The figures also show that we have not over-estimated the amount of milk-fat consumed as butter where it is freely available. But as far as Denmark is concerned, the export of milk-fat does not represent a surplus, so that the Danish people are starving themselves of milk-fat in order to export it. Widmark in his paper shows that the average daily consumption of milk-fat in Denmark has fallen from 40 g. in 1909 to 30 g. per head in 1914, with a demonstrable deterioration in the health of the people. During the years 1917 and 1918 the export of milk-fat was forbidden, and although less milk-fat was produced during those years the average consumption of milk-fat fell again rapidly to the low figure of 19 g. per day per head in 1920. As the consumption of butter diminished, that of margarine has increased proportionately. It will be noted that the low figure of the milk-fat consumption in Denmark for 1914 closely approximates that found for this country, in spite of the fact that in Denmark the home production of milk-fat exceeds the needs of the population. Economists will probably tell us that this must necessarily be so because milk-fat, like any other commodity, is subject to economic laws. But the economy of foodstuffs cannot be divorced in the

long run from dietetics. The replacement of butter by margarine may appear to be justified on economic grounds, because the cost of butter is twice that of margarine. On dietetic grounds, however, butter is not merely twice as valuable as margarine, but is in fact irreplaceable by it, so long as the minimum requirements of milk-fat have not been covered. That is to say, margarine can replace butter after the minimum daily requirements of 40 to 50 g. of milk-fat have been supplied. But until this amount has been supplied it is more economical to buy 1 oz. of butter than to buy 2 oz. of margarine, which cost the same amount. Even from the point of economics the cost of imperfect development, ill-health, and disease ought to be debited against a dietary which is not adequate. Once this is recognised there will be an enormous demand for milk-fat which, as things are at present, cannot be supplied.

It would be important to know the production of milk-fat and the consumption in the different civilised countries. It would also be of importance to ascertain whether during the last 20 years the production of milk-fat has kept pace with the increase in the population. I believe it will be found that at present we are suffering from a world shortage in the production of milk and, if the conditions in Denmark may be taken as a guide, that this shortage has been becoming increasingly acute during the last 20 years. A measure of the present shortage is given by the consumption of margarine in different countries. This can be seen from the following figures which give the yearly consumption per head in English pounds :—

Denmark	45·50	Sweden	12·25
Norway	35·25	England	11·75
Holland	15·70	France	1·50
Germany	12·30		

If the daily consumption of margarine per head is calculated for England it amounts to 14 g. The average daily consumption of milk-fat (30 g.), plus margarine (14 g.), is therefore 44 g. Since this agrees with the figure of 40–50 g. given by us as the minimal daily requirement in milk-fat, it confirms our contention that on a freely chosen diet this amount of milk-fat would be consumed, and attests the soundness of the basis of our calculation for the requirements in milk-fat of the population.

It has been argued that the shortage in milk production is not of serious import, because other sources of vitamin A are available in nature. This objection betrays a complete misunderstanding of the problem. It goes without saying that there is sufficient vitamin A available in nature to cover our requirements. For so far as we know the cow does not synthetise the vitamin A which is passed out in the milk, but derives it from the food. All the dairying in the world cannot, therefore, increase the store of vitamin A available in nature. What dairying does is to present vitamin A in articles of food which are palatable, convenient to handle and to consume, and valuable as food also from other points of view—for instance, as a source of a protein of high biological value, and of those mineral constituents in which most other foodstuffs are deficient. Whether for reasons such as these or on other grounds, it is a fact that for the people of this country the main source of supply of vitamin A in the diet is full milk and butter. Moreover, their dietetic habits are such that where full milk is not consumed and butter substituted by margarine, the resultant deficiency in the intake of vitamin A is not compensated for by an increased intake of other articles of food containing vitamin A, such as green vegetables or salads, although in theory they would be able to do so. Here, again, economic considerations probably play an important part.

We have to deal with conditions as they are and not as they might be. We have shown that large classes of the community suffer from a deficient intake of vitamin A. The remedy of this defect is a difficult and intricate problem. It is intricate because it involves the consideration of economic factors, of taste, of dietetic habits, and of a better understanding of the dietetic value of articles of food. One obvious remedy is the increased production of milk which is irreplaceable as such, and of special value to the growing organism. I believe it is not an exaggeration to say that a flourishing dairying industry, capable of supplying clean milk rich in vitamin A, is essential to the welfare of the community. The shortage in the production of milk is, however, so great as to make it improbable that it could be overtaken even if the milk production is greatly increased. There are also economic reasons which will make it impossible for large classes of the community to cover their vitamin A requirements completely by milk-fat. The necessity of a cheaper substitute for milk-fat will therefore remain, but it is desirable that this substitute should approximate more closely to the dietetic value of milk-fat than it does at present. The deficiency of margarine in vitamin A, and also the deficiency in calcium salts, in which butter is relatively rich, make margarine an inadequate substitute for butter. This defect can be remedied, for I am informed that a brand of margarine as rich in vitamin A as butter is already available on the market. It is significant, however, that its price is higher than that of the best margarine, though still lower than that of the cheapest butter.

The solution of these problems is dependent upon the collaboration of the medical profession. While it is obviously impossible to increase the consumption of milk and butter without increasing their production, it is also unreasonable to expect the farmer to increase the production of milk unless he can rely on an increased demand for milk and butter by the population. This can only be created by the teaching of the medical profession, upon which in matters of dietetics the public relies. On the other hand, the medical profession can impress upon the farmer the necessity of producing milk which is clean and rich in vitamin A. Fortunately, a beginning in this direction has already been made. No less an authority than Sir George Newman states in his report already referred to—"On the State of the Public Health" (p. 186) :—

> "When it is realised that little more than a quarter of a pint is the average daily consumption of milk in this country at the present time, some conception can be formed of (*a*) the inadequacy of the amount of this most valuable food, which its children are receiving, and (*b*) the improvement in their growth and vigour which might certainly be secured by an adequate increase in its consumption. . . . An important factor in bringing about this much desired result is the creation of confidence in the purity of the supply, and making milk more attractive to the consumer by enhancing its cleanliness and its keeping qualities."

For reasons already given in this paper, these considerations should apply also to adults and to their consumption of butter.

Summary.

1. It is possible to calculate the vitamin A requirements of man in terms of milk-fat. Every individual requires an average daily consumption of 40 to 50 g. of milk-fat, either in the form of milk or butter, in order to maintain his full health and vigour. This applies both to adults and to children. At the present time the average daily consumption of milk-fat is far below that figure for a great part of the population.

2. The total milk-fat produced in this country represents only 30–40 per cent. of the total average requirements of the population. The total milk-fat available in this country (home-produced milk-fat plus imported milk-fat) represents only 60–75 per cent. of the total average requirements of the population.

3. There are indications of a world shortage in the production of milk.

4. These conclusions emphasise the importance of increasing the production and the consumption of milk and butter.

ST. MARY'S POST-GRADUATE COURSE.

FOR the sixth consecutive year a refresher course, open without fee to all medical practitioners, was held at St. Mary's Hospital, London, over the first week-end in October and was well attended. While the majority of the 11 sessions were in the nature of informal demonstrations it is possible to epitomise several of the lectures.

The Treatment of Pernicious Anæmia.

Sir WILLIAM WILLCOX said that early recognition of the disease is a most important factor in the treatment of pernicious anæmia. A definite anæmia associated with a colour-index of approximately 1 or over, with a leucopenia, and a differential count showing diminution of the polynuclear leucocytes, and an increase in the lymphocytes, should be a sufficient indication of the pernicious type of the anæmia. Careful investigation and active treatment in the early stages may be rewarded by arrest of the disease and, he believed, by complete cure in some cases. In undertaking the treatment of a case it must be borne in mind that the disease is progressive, and will inevitably proceed to a fatal termination if left unchecked; therefore no effort should be spared to eliminate any possible causal factors, and the fullest advantage must be given to the beneficial value of a special diet, rest, general hygienic conditions, and medical remedies.

The first step in treatment is careful investigation for any possible causes which may be contributing to the blood destruction. All authorities are agreed that septic infection in the body is an important causal factor. In the many cases which had been under his care, and in which careful investigations had been made, there had always been definite evidence of toxic causes which he thought was amply sufficient to account for the symptoms of the disease. In pernicious anæmia the blood-forming organs appear to bear the brunt of the underlying toxæmia present. The teeth should be examined clinically and radiographically, and all those showing evidence of sepsis, and also loose or dead teeth, should be removed. The accessory nasal sinuses should be examined clinically and by X rays, and suitable treatment given to minimise infection from these sources. Septic tonsils should be removed. The gastro-intestinal tract should be investigated by X rays, by test-meal, and bacteriologically. The urine should be tested for indican for evidence of colon stasis. In most cases of pernicious anæmia a secondary infection is found in the intestinal tract (probably mainly in the colon), and this serves to maintain the infection when other causes have been removed. Suitable treatment for any abnormal condition should be carried out. Often Plombières colon irrigations on alternate days are of value. The urogenital tract should be investigated clinically and bacteriologically, and, if necessary, any abnormal conditions treated. The organism most commonly found present is a streptococcus, which may be of the viridans or hæmolytic type. Sometimes a coliform organism of hæmolytic type may be found. Vaccine therapy may be of value in aiding the removal of infective causes. Great care is necessary in its use, since these patients are usually sensitised to the underlying infection, and weak vaccines in small doses are indicated.

The careful and able investigations of Murphy, Minot, and their colleagues in America into the value of a special dietary in pernicious anæmia form a marked advance in the treatment of this disease, continued Sir William Willcox. They have shown that a diet composed of foods rich in complete proteins —particularly liver—and containing an abundance of muscle meat, fruit, and green vegetables, and low in fat, is of great advantage. They recommend as daily requirements: liver or kidneys, 20 g.; red muscle meat or heart, upwards of 125 g.; green vegetables, not less than 300 g.; fruits (grape-fruit, oranges, &c.), 400 g.; fats restricted to 70 g.; bacon, cheese, and fried foods to be avoided; milk to be limited to 240 g.; starchy foods not to be taken in excess. A very careful investigation of 46 cases has shown marked improvement after two weeks' treatment by the above dietetic régime. And the improvement has been maintained while the patients have followed the recommendations. Before commencing the special dietetic treatment, it is necessary to carefully study the digestive capacities of the individual, so that the diet treatment may be undergone without distaste. From trial of the suggested diet in several cases under his care, Sir William Willcox was convinced that it is of value and marks a distinct advance in treatment.

Hydrochloric acid is of definite value. It should be given in doses of ℥ xx.–xxx. of the dilute acid (B.P.), diluted with 3 or 4 oz. of flavoured water, and sipped with the meals. Murphy recommends the use of hydrochloric acid with his special diet. Arsenic has been one of the most used remedies. It may be given in the form of liquor arsenicalis or the hydrochloride solution. It should not be given in too large doses, owing to the risk of symptoms of arsenical poisoning, such as neuritis. Arsenophenol compounds intravenously have been recommended, but in the speaker's experience they are not usually of value, and may be dangerous, since hepatitis and jaundice may result from their use. Arsenite of iron in solution may be given intramuscularly and appears to be of value; gr. ¼ in 1 c.cm. of water on alternate days for 12 doses would be a suitable course. Cacodylate of soda, gr. ½ in ℥ x. of sterile water, may be given hypodermically daily for 20 days. Rest in bed, fresh air, and suitable climatic surroundings are essential, and artificial sunlight is of value in raising the body immunity.

Blood transfusion is of great value in cases of pernicious anæmia. It helps the severe cases over the stile, so that they may afterwards receive the full benefit of the diet and medicinal and general treatment. If the hæmoglobin percentage is 40 per cent. or lower, blood transfusion should be given without delay. It is a mistake to defer the transfusion until the hæmoglobin has fallen to 30 per cent., for then one transfusion is not enough, and two or more may be required. In Sir William Willcox's experience there is no special advantage in giving immunised blood. The usual care should be taken in giving blood of appropriate grouping. A quantity of about 500 c.cm. is desirable. Sometimes after a transfusion a transient rise of temperature and a rigor may occur within 24 hours. The administration of alkalies—e.g., citrate of potash in doses of gr. 40, three times daily, for the preceding 24 hours—minimises the risk of a reaction. After a blood transfusion there is a slight rise in the hæmoglobin percentage for three or four days, and then there is a further increase. The blood transfusion acts not only as an addition of fresh hæmoglobin, but as a stimulus to the blood-forming organs. In severe cases several repetitions of the blood transfusion may be required. After the successful treatment of a case of pernicious anæmia it is most important that the patient be kept under medical observation for a long period, since remissions are of such common occurrence in this disease. Periodic blood examinations are of the utmost importance, so that any set-back may be suitably treated in its early stages.

How to Deal with Retention of Urine in an Old Man.

Mr. ZACHARY COPE said that retention of urine in an old man is most commonly due to obstruction by an enlarged adenomatous prostate, less often to malignant disease of that gland. Tabes dorsalis must be excluded and care taken to see that the condition is not one of suppression of urine. Primary atony of the bladder occurs but is rare. It is of importance to distinguish between acute and chronic retention. The chronic form may have been going on for months without symptoms or pain, the urine being passed regularly as an overflow: the kidneys are affected by the back pressure and it is then dangerous

to empty the bladder quickly. The acute form, which is painful, supervenes in a patient who looks and feels well. The practitioner should first assure himself that the retention is due to the prostate, next determine whether it is acute or chronic, then relieve the over-distension without risking injury to the kidneys by too sudden diminution of pressure. Sometimes the patient may be induced to pass water by the influence of warmth applied to the hypogastrium or perineum, or by a sitz bath. A belladonna suppository may lessen any spasm. If a catheter has to be passed scrupulous care should be taken to avoid infection. A rubber Jacques catheter can do least damage but must be well lubricated and may fail. Usually a coudé or bicoudé silk-wove gum-elastic catheter will pass; it can be boiled before use. An assistant's finger passed into the rectum may help. The urine should be let out very slowly, and in chronic cases the bladder only half emptied at the first passing. If the gum-elastic fails to pass a silver prostatic catheter should be used with extreme gentleness. When a false passage prevents anything reaching the bladder a long cannula of small bore, or a three-inch hollow needle, can be inserted into the bladder in the mid-line just above the pubes as a temporary measure of relief. After the immediate emergency has been met further over-distension is prevented by one of three measures (always presuming that the patient cannot yet pass urine naturally). (1) Repeated and regular catheterisation may be undertaken twice in the 24 hours. (2) A self-retaining catheter may be passed per urethram. (3) A self-retaining catheter can be introduced by suprapubic puncture. Repeated catheterisation is satisfactory if the doctor or a skilled nurse can do it at stated intervals with aseptic precautions. In acute attacks a self-retaining catheter inserted for a few days may tide over the time until voluntary micturition returns. A Malecot two-winged or four-winged catheter or a Dowse are more satisfactory than the ordinary de Pezzer. The catheter is passed after stretching it on a long German silver probe whose curve is easily adjusted. The probe is inserted into the catheter which is stretched till the wings are flush with the rest of the tube; it is fixed in the stretched position either (with difficulty) by the fingers or (easily) by means of Guyon's device. It is passed into the bladder and released when the stilet is withdrawn. If tolerated well it can be left in from one to seven days when the patient can often pass urine naturally. A spigot should be put in the open end and removed when urine is to be passed. If there is hæmorrhage into the bladder or if prostatectomy is to be done afterwards it is wise to put a self-retaining catheter into the bladder by the suprapubic route. This is done under local anæsthesia by the special trocar and cannula manufactured for that purpose. When called to a case of retention it is impossible for the practitioner to know beforehand what measures may be required, and Mr. Cope demonstrated a prostatic retention-case containing everything likely to be needed in an emergency, made to his requirements by the Genito-Urinary Manufacturing Company. He concluded by emphasising again the danger of emptying rapidly an over-distended bladder.

The Use of the Duodenal Tube in Gastric and Duodenal Ulcers.

Dr. ERNEST YOUNG said that duodenal feeding as a method of treatment of gastric and duodenal ulcers was introduced by Max Einhorn, of America, and has since been employed extensively by several of the leading men in that country. So far as this country is concerned, however, although the duodenal tube has been used for several years past for purposes of diagnosis, its therapeutic value for duodenal feeding in peptic ulcers has been unaccountably neglected. For the last few years Dr. Young had employed this method of treatment in most of his cases of peptic ulcers with better results than from any other form of treatment. Briefly, he said, the method consists in passing a small rubber tube with a perforated metal tip into the stomach, whence the peristalsis of the stomach gradually forces the tip of the tube through the pylorus into the duodenum. A few simple tests determine when the tube is in the duodenum, and feeding then commences, the patient receiving through the tube eight liquid feeds each day at two-hourly intervals, for the whole period of active treatment—18 days. The rationale of the method may be summed up in one word—*rest*. The stomach is out of action; no food and—what is even more important—no acid secretion passes over the ulcer, which is therefore kept free from irritation and given a chance of healing. Feeding is accomplished by means of a small irrigator, the distal end of the attached rubber tube being fitted with a graduated glass nozzle, this nozzle being connected with the proximal end of the duodenal tube when required. The duodenal tube is 47 inches in length, and is marked with black rings at 23 and 30 inches from the tip. When the tube is well into the duodenum the 30-inch mark is level with the teeth, while the tip of the tube is extended some 7 inches past the pylorus, well beyond the usual site of a duodenal ulcer. The proximal end of the tube is 17 inches outside the mouth, and when not in use is closed with a bone plug. The feeds consist alternately of 8 oz. of egg and milk and 8 oz. of Benger's food with a tablespoonful of cream. They should be given at body heat and strained through gauze to prevent any thick particles blocking the tube. After the last feed on the evening of the eighteenth day the tube is withdrawn. The next morning light solid food is commenced forthwith. Breakfast may consist of a scrambled egg, rusks, a little butter, and a teacupful of China tea. For lunch, boiled fish, sieved potato, rusks, baked custard, half a tumblerful of water. For tea, two teacupfuls of China tea and a few plain biscuits. For dinner, breast of chicken, sieved potato, rusks, junket and cream, half a tumblerful of water. One hour before breakfast, and at 10 P.M., a tumblerful of hot water. After a week or so the diet may be gradually increased and varied; thus two eggs (boiled, poached, or scrambled) or thin slices of cold boiled bacon may be taken for breakfast and stale white bread substituted for rusks; tender beef or mutton can also be taken occasionally at lunch and dinner as a change from fish or chicken, and in this way the patient may slowly return to a more or less normal diet within a month. It is well, however, for a space of three months to forbid all fruit, either raw or stewed, and to permit a second vegetable only if passed through a sieve.

Dr. Young reiterated his statement that he had obtained better results from this method than from any other therapeutic measure. Apart from this, he said, the short period required for active treatment is greatly in its favour; the patient's confinement to bed is limited to 18 days, and he may be up and about on a light diet within three weeks. Although he had followed Einhorn regarding technique, he had modified his suggestions regarding diet.

The Significance of Pain in the Lower Extremities and its Treatment.

Dr. WILFRED HARRIS said that persistent or repeated pain must not lightly be dismissed as rheumatic or as functional. The character of the pain may be a clue to diagnosis, as in the lightning pains of tabes; the distribution of the pain around the hip and groin and front of thigh will suggest arthritis of the hip, while pain shooting down the back of the thigh into the calf and ankle is characteristic of sciatica. Sciatic neuritis often, however, accompanies arthritis of the hip. Rheumatic sciatica may be mistaken for the pain produced by malignant growths in the pelvis, the distribution of the pain being identical, though a history of an antecedent breast operation may furnish the clue. Caries of the lower spine or of the pelvis may also simulate sciatica until the appearance of a cold abscess decides the diagnosis. Paroxysms of very severe pain may occur in anterior crural neuritis, of septic or diabetic origin. The pain

is here down the front of the thigh and inner side of the leg, while the knee-jerk may be lost; in sciatica the knee-jerk is unaffected, but the Achilles jerk is lost in a large proportion of cases. Herpes zoster may be a sign of central disease affecting the lower lumbar roots, and tumours of the lumbo-sacral region of the cord may cause perplexing pain until the appearance of anæsthesia, muscular wasting, and alteration of the reflexes. Chronic vascular disease, thrombo-angiitis, and endarteritis obliterans, perhaps complicating diabetes, may cause intense wearing pain, but should be easily recognised by changes in colour and loss of arterial pulsation. Some cases are much benefited by periarterial sympathectomy. Sciatica and many chronic pains may be relieved temporarily and sleep obtained with the aid of linseed and mustard poultices; the mustard must be weak. Acute sciatica may be temporarily much relieved by subcutaneous injection of oxygen along the upper course of the nerve, while chronic cases are frequently cured by two or three intraneural injections of 60 to 80 c.cm. of sterilised saline at the sciatic notch and infra-gluteal fold.

LESSONS FROM LIFE-TABLES.

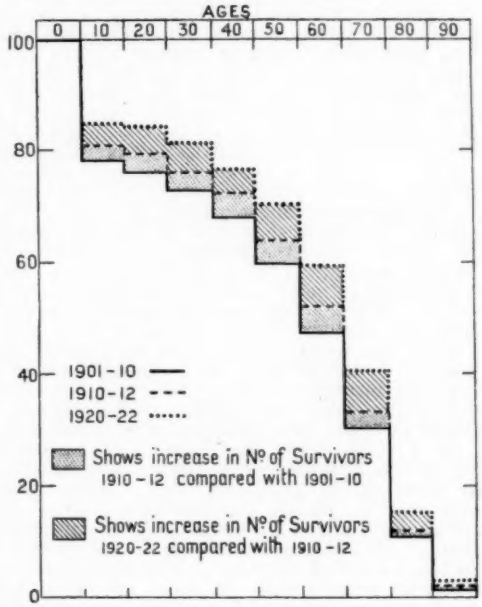
SOME POINTS FROM THE REGISTRAR-GENERAL'S DECENNIAL SUPPLEMENT.

IN a previous article (THE LANCET, Oct. 1st, p. 715) attention has already been drawn to Part I. of this Supplement, which is concerned with national life-tables; and the remarkable increase in expectation of life has been emphasised. On this point a further illustration may be adduced. Taking England and Wales as a whole, the expectation of life at birth for males has increased by 7·09 years, and for females by 7·20 years between 1901–10 and 1920–22. But when the rural districts of the eastern counties are contrasted with the county boroughs of Northumberland and Durham, on the basis of the recent experience of 1920–22, there is a difference of average years of life in favour of the eastern counties of 12·74 years for male children at birth and of 10·43 years for female children at birth. It is evident therefore that the possibilities of large further improvements in average duration of life are far from being exhausted.

The statement of number of survivors at different ages out of a given number born shows for a life-table population the actual number of added years of life at each period of life. For males, Fig. 1 shows the saving in each decade of life when the life-table experience—i.e., the experience of 100,000 males followed from birth to extinction—during 1901–10 is compared with that of 1910–12, and when the experience of 1910–12 is compared with that of 1920–22. There has been gain in years of life at all ages in both the two more recent periods, the gain being greater at every age in 1920–22 than in 1910–12. Furthermore, the greatest part of this gain has been secured at the working years of life from 20 onwards. Even the older ages, from 70 onwards, have shared the gain in vitality, though to a smaller degree. Another view of the same events is illustrated in Fig. 2, in which the difference for any age in probability of surviving ten years is shown in the experience of the three life-tables under comparison. The differences on the scale adopted do not appear so striking as those in Fig. 1, which represent the accumulated advantages at any age from all lower ages; but they are nevertheless very important. The greatest improvement in the prospect of surviving ten years is, as might have been anticipated, at birth. The probability of a child dying in the first year of age has decreased 40 per cent. in 15 years. At age 10 both recent periods show improvement over 1901–10, but there is little difference between 1910–12 and 1920–22. At age 20 there is no marked difference between the three periods. At ages 30, 40, 50, 60, and 70 marked improvements are shown.

From the point of view of public health possibilities great interest attaches to the comparison in the life-table report between the experience of the county

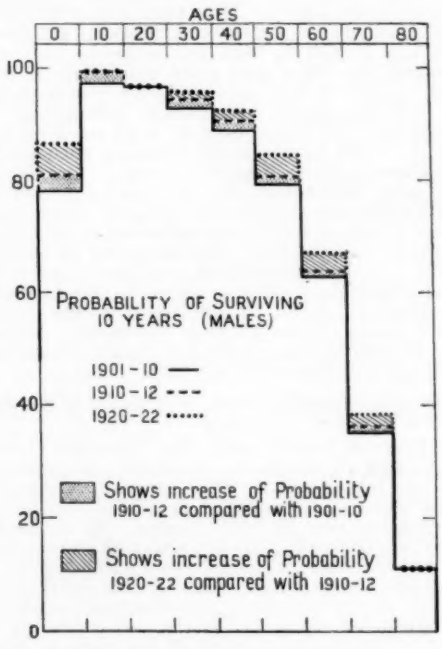
FIG. 1.



Number of survivors (males) out of 100,000 born in accordance with the experience of 1901–10, 1910–12, 1920–22.

boroughs in the counties of Northumberland and Durham and that of the rural districts of the eastern counties of England. The results are shown for males and females respectively in Figs. 3 and 4.

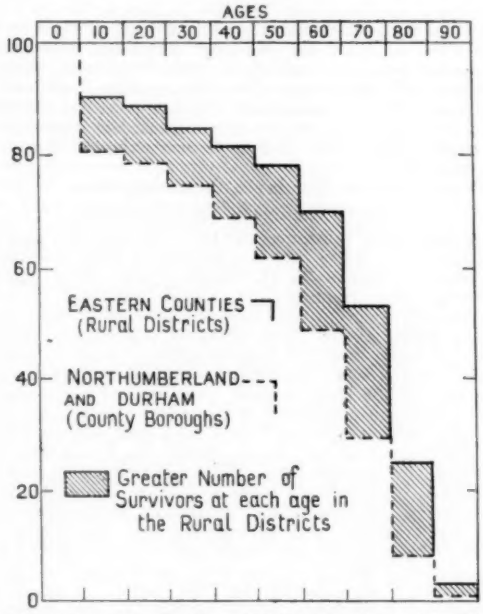
FIG. 2.



In Fig. 3 are given the number of survivors out of 100,000 male children born, according to the experience of deaths, in 1920–22, in the urban and rural

parts under comparison. The steps of the lower curve show the experience of favourably placed rural counties. They do not represent the best attainable

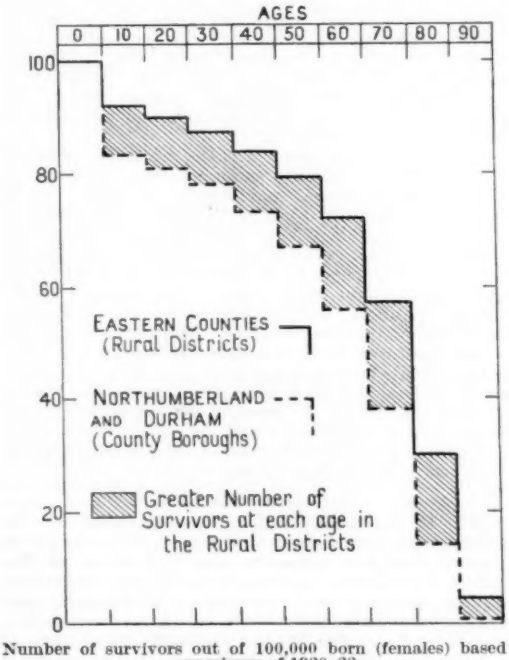
FIG. 3.



Number of survivors out of 100,000 born (males) based on experience of 1920–22.

position, for a large part of this rural mortality at successive ages is preventable—that is, it might, in more favourable circumstances, be postponed to

FIG. 4.



Number of survivors out of 100,000 born (females) based on experience of 1920–22.

later ages. But the steps in the upper curve show for densely populated industrial towns the distance still to be travelled before the relatively favourable position of the rural counties is reached. That much, probably the greater part, of this gap can be closed up is practically certain. Fig. 4 shows that the gap is slightly less for females than for males; but the gap is there, and it is evident that both in domestic life and in industrial circumstances there are insanitary and antisocial conditions which militate against health. There are strong *a priori* grounds for the conclusion that climatic differences are not chiefly responsible; and there is evident scope for more detailed investigation and analysis of the vital statistics concerned, and for the application of the social and sanitary measures of amelioration and prevention which such increased knowledge would make at once applicable.

Sir Alfred Watson has made some interesting observations on the differences between rural and urban mortality. He draws attention to the too neglected fact that occupational and industrial conditions do not suffice to explain the facts, though they are important. The female death-rates in the urban areas specially considered are also high, though not quite so high as those of males, in the areas of excessive mortality. There is needed a further study of the total conditions of mortality in special industrial areas to throw light on this problem.

One elusive element consists in the specially low death-rate of males in rural areas. This is explicable largely by their outdoor occupations, and this explanation throws some light on the relatively less favourable mortality of females in rural districts in early adult life. The greater migration of young women than of young men to towns also bears part in this result.

Another interesting problem arises out of the fact that at the years of life from 18 to 27 inclusive, the death-rate for females is appreciably higher in 1920–22 than in 1910–12. Not only so, but in the central counties of England from ages 16 to 28 the female death-rate in the rural districts was higher than that of the county boroughs. This result must be attributable largely to migration of the stronger women to towns; but inasmuch as tuberculosis contributes some 40 per cent. to the total deaths at these ages, it is likely that more successful and complete methods of dealing with this disease in towns accounts for some of the difference. The problem of tuberculosis in relation to the retardation of reduction of death-rate in early adult life is suggested for further inquiry by Sir Alfred Watson, and it is to be hoped that it will be made the subject of careful statistical investigation.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

The Royal Sanitary Association of Scotland.

THE Royal Sanitary Association of Scotland, which has just held its fifty-third annual meeting, began almost with the beginnings of the public health movement in the north. It has steadily increased in membership and influence until to-day it may fairly be called an unofficial sanitary parliament of Scotland. Its council includes representatives of all the grades and varieties of officers engaged in public health administration, central and local, together with unofficial members and representatives of local authorities. The congresses, as a rule, are attended by delegates from every important area and the discussions may fairly be taken as showing an enlightenment of public opinion. Other associations, such as the Health Visitors and the Insurance Committee Associations, have crept up meanwhile and have secured special places on the fringes of the official administration; but none of them has quite the place of the Royal Sanitary Association, which not only discusses policy, but is also an examining body and has an official place in the central examination committee for health visitors.

At the recent Inverness meeting the "popular lecture" was given by Prof. J. R. Currie, who dealt

primarily with pestilence and showed how the advance of hygiene depends ultimately on a growing consciousness of the importance of air, light, and sports, on the facilities for securing them, and on the education of the public. Dr. A. S. M. Macgregor presided over the meeting and added another to the many well-loaded papers contributed to the Association by his predecessors in the office of medical officer of health for Glasgow, Dr. J. Burn Russell and Dr. A. K. Chalmers. It seems to-day barely credible that Sir William Gairdner, Russell's predecessor, was actually the first medical officer of health of Glasgow, so young is this great movement. He was one of the great heart specialists and now, by a very circuitous route, we are coming back through "the prevention of rheumatism" agitation to the point where Gairdner's clinical insight would be of profound value to the health authorities—which in his official days were only beginning to clean their dirty courts and to tackle typhus seriously.

Dr. Parlane Kinloch, M.O.H. for Aberdeen, opened a discussion on local authority hospitals. This is rapidly becoming a living issue, and I notice that one of the planks in the Labour platform at the coming Edinburgh municipal election is a new municipal hospital. This has a special interest at the moment, for it has been announced that the fine hospital at Craigleith, which has been occupied for national purposes ever since the beginning of the war, is to be handed back by the Ministry of Pensions to the parish council next Whitsun. Obviously, this hospital is likely to be a precipitation point for ideas on hospital reorganisation, especially now that reform of the Poor-law is at last passing on to the plane of practical politics.

There was a good discussion on the working of the Tuberculosis Order of 1925. Mr. Trotter (Glasgow) moved that the conference, being of opinion that the Tuberculosis Order did not ensure complete protection to consumers of milk from infection by bovine tuberculosis, resolve to request the Ministry of Agriculture to take steps as may be necessary to educate stock-owners as to the necessity of conducting methods for the eradication of bovine tuberculosis and to inaugurate a scheme for the assistance of stock-owners who would voluntarily adopt eradication methods, the Ministry to provide the necessary facilities. Dr. Gerald Leighton, medical officer (foods), Scottish Board of Health, said that the great majority of local authorities, and especially those in the milk-producing areas, were doing splendid work under the provisions of both the Order and the Dairies Act. So far as he was able to judge, the milk-supply as a whole was improving more rapidly than it had ever done before and was certainly much better to-day than ever it was.

The inevitable discussion on the housing problem showed that Scotland is at last awake to its vastness and importance.

THE "MEDICAL OFFICER."—On Saturday, Sept. 24th, Mr. George S. Elliston, the editor of the "Medical Officer," gave an informal dinner at the Criterion Restaurant to the "Friends of the Journal" to celebrate the 1000th issue of the paper. A large part of the Council of the Society of Medical Officers of Health were present, the Principal Medical Officer of the Ministry of Health, the principal officials of the British Medical Association, and the editors of the medical journals, and all united in congratulating Mr. Elliston on his valuable work, and in wishing him success in conducting the "Medical Officer," and the further literary work which he has in contemplation.

MERSEYSIDE VOLUNTARY HOSPITALS.—A conference of representatives of Merseyside Voluntary Hospitals has been held to consider a development of the system of 1*d.* in the £ contributions. The purpose in view is to meet the needs of the whole of the Merseyside hospitals, and to give the managing authorities an opportunity to invite firms and organised labour to participate more generally in the scheme. Mr. Sidney Lamb, Secretary of the Liverpool Hospitals Council, states that the 1*d.* in the £ scheme is steadily growing—the increase in the council's income being £3500 in excess of the amount a year ago.

THE PROBLEM OF VENEREAL DISEASE.

IMPERIAL SOCIAL HYGIENE CONGRESS,

WESTMINSTER, OCT. 3RD–7TH.

THE Imperial Social Hygiene Congress opened at the Caxton Hall on Monday morning, when the delegates were welcomed by the President, Major-General J. E. B. SEELY, who delivered his Presidential address. He was supported by Lord LOVAT, Parliamentary Secretary for the Dominions, Sir FREDERICK LUGARD, and the High Commissioners for the Dominions.

The subject of Monday's discussions was

Imperial Aspects of Social Hygiene,

with particular reference to the incidence of venereal disease in the Navy and the welfare of seafaring men.

Surgeon-Captain T. B. SHAW, R.N., gave figures showing the increase in naval venereal disease during and after the war, and the gratifying reduction of the case-ratio in 1924 to 81·84 per 1000; 72 per cent. of these was due to gonorrhœa, and he maintained that research into the treatment of this disease was one of the most urgent questions of the present day. He then compared the incidence in the various stations, which showed that China had almost twice as many cases as any other, while the home stations claimed the lowest rate. The preventive measures employed by the Navy were education, local disinfection, early diagnosis and treatment, recreation and physical training, and quarantine and restriction of leave. The preparation found best for self-disinfection was a starch and glycerine jelly containing one part of mercury oxycyanide in 750 parts. Organised games had been found to be by far the best form of physical training, and the Navy Handbook listed no fewer than 57 games which could be played on board with little or no apparatus. He urged the formation of a Mercantile Marine Sports Board on the lines of the R.N. and R.M. Sports Control Board, and described the tremendous improvement in the conduct of sailors since the inauguration of the "Cruising Club," which provided a club building at ports where sailors' institutes and other amenities were not available. In close connexion with this was the "accommodation register" of suitable lodgings for sailors. Although ho tels, &c., were not excluded, the majority of these lodgings were individual homes where the charge was a fixed one of 1*s.* for bed and where many friendships were cemented.

Dr. R. M. F. PICKEN (M.O.H., Cardiff), speaking in the afternoon on the same subject, took as his text the international agreement of 1925, which laid down a scheme for the treatment of seafaring men. This included the establishment of a free venereal disease service in all the chief ports and the issue to each patient of a treatment card which he could carry round with him. The British Social Hygiene Council had undertaken the necessary advertisement of these centres. Most important was the provision of beds for the treatment of acute phases. While recognising the importance of perfecting educational and recreational measures, Dr. Picken held that the life of the seaman offered such peculiar difficulties that notification and ablution centres would be of value in preventing the spread of venereal disease.

Discussing the welfare of seamen in

Indian Ports,

Mr. W. R. S. SHARPE (Deputy Chairman of the Bombay Port Trust) described the terrible conditions of many Eastern seaports and the work of the Bombay Port Trust. He regarded efficient centralised organisation as the essential requirement, and suggested that seamen's welfare should be made a special branch of the Marine Department of each of the maritime provinces of India.

Mr. L. BOWDEN, arguing that welfare, health, and port conditions should be a matter for international convention, pointed out that regulations suitable for shore populations rarely suited the seaman. It was

the work of insurance to prevent disease as well as to provide medical care ashore, welfare centres in the ports of the world, and treatment afloat. He suggested that the work should be organised by the League of Nations, a proportionate premium being paid by all maritime nations, and outlined a scheme. Most merchant seamen went to sea during adolescence, when life-long habits were being formed.

Sir GEORGE BUCHANAN outlined the work done and in contemplation, and said that it was essential to provide in every port treatment that should be gratuitous, modern, and continuous.

Dr. DAVID LEES said that the difficulties of combining the two viewpoints, prevention and treatment, were often exaggerated. He emphasised the necessity for providing beds, as seamen often had no homes and could not possibly carry out treatment in doss-houses or lodgings. He criticised the lack of interest shown by medical officers in writing up the case-sheets of seamen, and proposed that the forms should have a space wherein each medical officer might write suggestions for the treatment at the next port. There should be an officer, of the nature of a senior orderly, on board each ship doing long journeys, supplied with the requisite drugs and able to advise seamen how to carry on treatment between ports. At present there was no intermediate treatment for the majority of patients. Sir George Buchanan's conditions were not fulfilled in any port in India, and he hoped the Central Government would coöperate with provincial governments and see to the provision of outdoor and indoor accommodation for European seamen and lascars and to the provision of free salvarsan. It was most important that the General Medical Council should insist on a proper training in venereal disease for Indian medical students; only thus would the quack be eliminated.

Dr. A. O. ROSS described the work in Liverpool; an enormous increase of attendances had followed the extension of clinics to seamen. All incoming ships were visited and the captain asked to provide a list of his men suffering from venereal disease. They were then seen and advised to attend the Seamen's Dispensary; if they did not report within 24 hours they were again visited by the port sanitary inspector. Two-thirds of them attended. The Ship Captains' Medical Diary badly needed revision. Intermediate treatment was certainly most important; salvarsan was a dangerous drug when given irregularly. The syringe should be abolished; many patients had been supplied with an irrigation apparatus and solution for use at sea.

Mr. E. B. TURNER recounted the measures taken by the General Medical Council to ensure adequate training and examination in venereal diseases.

The chair at this meeting was taken by Sir BURTON CHADWICK, Company of Master Mariners, owing to the absence, through illness, of Admiral Sir Reginald Tupper.

Tuesday morning's discussion was on the medical aspects of social hygiene, and Dr. DAVID LEES presided.

Colonel L. W. HARRISON read a paper on the

Modern Treatment of Syphilis and its Results.

He commented on the great diversity of opinion as to the amount of treatment required, and the best form of giving the drugs. He then laid before the meeting the tabulated results of an investigation into the results of treatment at the St. Thomas's Hospital Centre. The cases were carefully classified into (1) sero-negative primary, (2) sero-positive primary, (3) early secondary with roseola, (4) late secondary with lenticulo-papular eruptions, and (5) late stages, and were also grouped according to the amount of treatment they received. Serum results showed that there was no appreciable difference between the varieties of "914," nor did bismuth in the early stages show any superiority over mercury. Its action seemed to be that of preventing the tissues from reacting to the spirochæte. His conclusions were: (1) it was most important to start treatment before the serum reactions become positive; (2) the minimum amount of treatment for a sero-negative primary case was 20 injections, totalling 10–12 g. of "914" with mercury or bismuth, and for sero-positive primary and early secondary cases quite 50 per cent. more; (3) bismuth was not a substitute for arsenobenzol in early cases, and its main superiority over mercury lay in its tolerability; (4) the method of administering mercury or bismuth simultaneously with arsenobenzol had advantages over that of following a course of one with a course of the other, especially from the point of view of preventing neuro-recurrences; (5) the coincidence of negative serum reactions with positive cerebro-spinal fluid was so uncommon and the inconveniences attending lumbar puncture were so great that in cases which had run a straightforward and satisfactory course from the serological point of view routine examinations of the cerebro-spinal fluid might safely be omitted.

Prof. F. J. BROWNE, in a paper on the

Management of Cases of Venereal Disease in Antenatal and Postnatal Clinics,

said that in an ordinary clinic the frequency of syphilis was about 7 per cent. In discussing the *diagnosis* he remarked on the difficulty of getting a syphilitic history from multiparæ, on the importance of searching both the patient and her story carefully for suspicious signs, on the value of the positive Wassermann and on the necessity for examining the products of conception. Evidence of syphilis should be sought in the placenta, the cord, and the fœtus. A final test, where others failed, was the "therapeutic"—i.e., giving a patient with a suspicious history a course of antisyphilitic treatment. If this resulted in the birth of a healthy child the case might be regarded as one of latent syphilis.

Treatment should begin as early as possible, preferably before conception, and should continue throughout every pregnancy up to the time of confinement. Drugs should not be combined on account of the danger of kidney damage; arsenic was less dangerous than bismuth and mercury, but in the absence of albuminuria they might be given alternately. The best results followed six or eight weekly intravenous novarsenobenzol injections followed by a month's interval, during which intramuscular grey oil was given weekly. These courses should be continued for at least 18 months, or up to a year after all tests were negative. The only proof of cure was reinfection. *Gonorrhœa* did not often take an acute form in pregnancy. The subacute forms could only be detected by careful examination, in the lithotomy position, of the whole genital tract. The discharge could usually be cleared up in a few weeks by bi-weekly swabbing of the cervix, preceded by cleansing with sodium bicarbonate to remove mucus. Many preparations could be used, but saline solution gave equally good results. An astringent dusting powder should be used on cervix and vagina after the swabbing. Detoxicated vaccines were helpful. Douching had no place in pregnancy and all handling must be very careful. Treatment should be continued until all clinical evidence of disease had been eradicated.

After outlining the treatment of venereal diseases in pregnancy, Prof. BROWNE laid down a number of principles which included a routine Wassermann and the provision of antenatal beds, and a venereal centre in the maternity hospital, with treatment by a woman expert. Under no circumstances should any part of the machinery be labelled "V.D.," and all vaginal discharges should be treated in the clinic. Coöperation with a skilled pathologist, the child welfare medical officers, the general venereal disease clinic, the husband, and a special "follow-up" nurse was essential to the scheme. He advocated the compulsory notification of pregnancy at the third or fourth month.

Dr. MARGARET RORKE urged full arsenical and bismuth treatment for the syphilitic woman in pregnancy. In pregnancies subsequent to a thorough

course, lesser doses might be given, unless the husband had failed to pursue his treatment. A common and tiresome complication of gonorrhœa in pregnancy was the superimposition of an acute *B. coli* infection. Acute urethritis was another dangerous complication; diathermy during pregnancy had given satisfactory results. Where antenatal and baby clinics were some distance from the venereal disease centre it would be helpful if a venereal disease medical officer could attend weekly or fortnightly.

Dr. A. O. ROSS said that intensive treatment (e.g., bi-weekly injections of N.A.B. and bismuth for four to six weeks) gave a high cure-ratio. Cases remained sero-negative for at least three months after it; 98 per cent. of sero-positive cases, infected for two years or less, became negative; and 72 per cent. of those infected more than two years showed a negative result three months after a course of treatment. It was essenital that the treatment be absolutely regular.

Dr. A. CAMPBELL emphasised the necessity of repeated Wassermann tests. He gave 27 doses of neosalvarsan in a year's course; quite a number of patients relapsed three months after the course ceased. In the second year he gave large doses of mercury. Many cases were arsenic-fast to begin with; they might have been infected by a person who had received arsenical treatment. For this reason it was wise to change from one variety of arsenic to another. He was convinced that we were paying the penalty, in our large number of neuro-syphilitics, for the very small doses of mercury which had been in vogue just before the introduction of arsenic.

Colonel HARRISON quoted an investigation into 280 women who showed absolutely no signs of syphilis; 40 of them had proved to have positive Wassermann reactions. One child of twins might be syphilitic and the other healthy. He pleaded for closer liaison between child welfare and venereal departments; where venereal treatment had been provided at maternity centres it had been most successful, and he hoped the practice would be extended. Both he and Dr. Lees drew attention to the great importance of antenatal treatment of gonorrhœa.

Dr. LEES said that syphilis was grossly under-treated in this country, and in India the average amount of treatment given was appalling. Steps should be taken to control bismuth as arsenobenzol was controlled, and to stop the alluring and misleading advertisements of new and untested preparations, the only result of which was neuro-recurrence. Dual therapy was more potent than monotherapy, and he had found it possible to give bismuth and arsenobenzol together to pregnant women. Arsenic and bismuth were better and more tolerable than arsenic and mercury. He urged the importance of routine dental and post-puerperal examinations of all cases. While disappointed by diathermy for gonorrhœal urethritis, he had had good results from protein shock and local vaccine spraying. The urethra was very deceptive and might often be passed as cured when careful bacteriological inspection would reveal an infection.

The Congress Dinner was held at the Hotel Cecil on Monday evening, when Major-General J. E. B. Seely was supported by Sir Burton Chadwick, Sir Walter Willson, Sir William Schooling, Prof. Winifred Cullis, Mr. E. B. Turner, and others. The Minister of Health, proposing the toast of "Health and Empire," outlined the work of the Ministry in promoting imperial health, mentioning the establishment of the London School of Tropical Medicine and Hygiene, and the Post-Graduate Medical School at the West London Hospital. He urged local authorities to realise the true economy of contributing from the rates to the work of the British Social Hygiene Council.

Further meetings of the Congress this week will deal with health in India and the Colonies, and with the educational and administrative aspects of social hygiene.

LONDON MEDICAL EXHIBITION.

THIS exhibition, which opened at the Central Hall, Westminster, S.W., on Oct. 3rd, and which closes to-day (Friday), is the largest that has been held since the inception of these exhibitions in 1905, every available inch of space in the upper and lower halls being occupied, while the attendance, both of home and overseas doctors, has been particularly good. The exhibition may now be said to cover the whole range of medical and surgical treatment, and is a useful means of keeping the busy practitioner and the post-graduate student abreast of the new drugs and appliances which follow in the wake of progressive medical research.

DRUGS AND PHARMACEUTICAL PREPARATIONS.

BURROUGHS WELLCOME AND CO. (Snow Hill-buildings, London) exhibited many scientific products of particular interest and service to the medical practitioner. A feature of the stall was the display of the causative micro-organisms of such diseases as tetanus, pneumonia, leprosy, syphilis, gonorrhœa, influenza, and diphtheria, shown by coloured transparencies, and the various medicaments used in the treatment of the diseases in association. Products which attracted special attention were Anti-Gas-Gangrene Serum (*B. welchii*) for treatment of toxæmia associated with acute intestinal obstruction, and peritonitis with ileus. Three important products for the treatment of leprosy shown were "Moogrol," a mixture of esters of acids of the chaulmoogric series; "Avenyl," for use in leprosy complicated with syphilis; and "Alepol," which marks another advance in leprology, presenting, as it does, a fraction (low melting point) of the total fatty acids of hydnocarpus oil. Salicin, which is of great interest at the moment, owing to the fact that it is found to reduce temperature in cases in which quinine, salines, and other methods have failed, was presented as "Tabloid" Salicin, gr. 5 and 0·25 g. Another item of interest at this stall was Irradiated Ergosterol, which, in view of the increasing importance attached to vitamin-containing products, is of interest in that it offers a method of supplementing "Kepler" Cod Liver Oil in those cases where intensification of treatment is needed.—BOOTS PURE DRUG COMPANY, LTD. (Nottingham), had several additions to their large list of scientific products, a notable feature being a large container of synthetic Thyroxile actually manufactured in Nottingham, with a chart showing the various stages of preparation. Hexyl-Resorcinol-Boots, hitherto issued only in capsules, was in tablet form, and Cholumbrin—critically purified Sodium-Tetra-Iodo-Phenolphthalein—was exhibited in specially coated capsules, to ensure the highest percentage of positive results. Acriflavine (Boots) and a long series of pharmaceutical products of this antiseptic were prominently displayed, including a sterile emulsion which offers many advantages in surgery over the aqueous solution. Specific treatment products, embracing Stabilarsan, Sulphostab, Bismostab, Gonococcal Vaccines (St. Thomas's), and Thiostab were also shown.—ALLEN AND HANBURYS, LTD. (37, Lombard-street, London), had a very attractive exhibit of dietetic and pharmaceutical preparations, among them being Perfected Cod Liver Oil, Liquid Beef, Bynotone, a nutrient consisting of red bone-marrow, hæmoglobin, yeast nuclein and malt extract, and foods for infants. Particular attention was called to the Iodolysin preparations used in the treatment of rheumatism, rheumatoid arthritis, and other diseases, iodolysin being a soluble compound of Thiosinamin containing 47 per cent. of iodine.—On the stall of OPPENHEIMER, SON AND CO., LTD. (179, Queen Victoria-street, London), was an instructive display of Bipalatinoids, "Oscols" for the administration of colloidal therapy, and "Pulverettes," or powder pills, as well as the Palatinoid form of administering hormone products. Much interest was shown in the "Aeriser" made by this firm, drugs by its means

being introduced into the air passages in a state of extremely fine division—an almost invisible vapour.—Particularly prominent on the stall of SAVORY AND MOORE, LTD. (143, New Bond-street, London), were pictures of children showing the value of the food preparation for which this firm is well known. Other exhibits were Peptonised Cocoa and Milk, Peptonised Milk, and many pharmaceutical products elegantly prepared.—CHAS. ZIMMERMANN AND CO (CHEMICALS), LTD. (9–10, St. Mary-at-Hill, London), drew attention to Asthmolysin (Weiss), a standardised suprarenal pituitary compound for hypodermic use in bronchial asthma, and to Angiolymphe (Rous) for intramuscular injection in tuberculosis.

W. MARTINDALE (10, New Cavendish-street, London) again exhibited a very wide selection of pharmaceutical preparations, prominent among them being "Bromo-Ray" (Sodium Tetrabromphenolphthalein) and "Iodo-Ray" (Sodium Tetraiodophenolphthalein) for use in cholecystography. Attention was also called to Methyl-Aspriodine for inunction in acute and chronic rheumatic affections.—MENLEY AND JAMES (64, Hatton-garden, London) showed Iodex products, including liquid Iodex, and new preparations, including Vitaminose (Vitamin Chlorophyll Compound).—C. J. HEWLETT AND SON, LTD. (35–42, Charlotte-street, and Curtain-road, London), presented a wide range of "Colloigen" preparations—Alumnia, Argentum, Calcium, Iodine, and Sulphur—and many drugs and chemicals, and surgical instruments.—MAY AND BAKER (Battersea and Wandsworth, London), in their large display of pharmaceutical preparations, included Metarsenobillon, a water-soluble arsenobenzene derivative for subcutaneous or intramuscular injections, Thallium Acetate for oral administration for the epilation of the scalp in the treatment of ringworm, and Opacin for cholecystography orally or by intravenous injection, and Ephedrine, whose action is similar to that of adrenalin, but claimed to be more lasting.—Quite a large amount of interest was shown in the stall of H. R. NAPP, LTD. (3–4, Clement's-inn, Kingsway, London), who, among their many medical preparations, showed Cardiazol, a restorative which is claimed to be more efficacious than camphor, and completely soluble in water; Ephetonin, to replace adrenalin in bronchial asthma and hypotonia; Vigantol, 4 centigrammes of which equals 2 gallons of cod-liver oil in antirachitic treatment, was also prominently exhibited, the vitamin D content being particularly emphasised.—BAYER PRODUCTS, LTD. (19, St. Dunstan's-hill, London), had a special exhibit of Vigantol, the new D-vitamin product, which was the centre of a constant stream of visitors.—In connexion with the increasing interest in vitamin D it may be mentioned that a special set of apparatus for vitamin test, as used by the National Council of Medical Research Laboratories, was shown by the TINTOMETER, LTD. (Colour Laboratory, Salisbury).

PARKE, DAVIS AND CO. (50, Beak-street, Regent-street, London) showed a fine selection of pharmaceutical specialties and biological products, prominent among them being Chloretone Inhalant, a combination of camphor, chloretone, and menthol in a base of liquid petroleum, Immunogens, a new series of soluble bacterial antigens, and Sanocrysin (AuS_2O_3)$2Na_2$ for the treatment of certain forms of tuberculosis.—MODERN PHARMACALS, LTD. (2, Calthorpe-street, London), showed Sulfarsenol, and E. H. SPICER AND CO., LTD. (72, Wigmore-street, London), exhibited the Bacillus Acidophilus Emulsion, of which they are the manufacturers, and the "Homburg" pharmaceutical specialties, including Transpulmin, a combination of quinine and camphor in ethereal oils which provides painless means for the injection of quinine, and which is indicated in influenza, bronchitis, and pneumonia; Spirobismol, a chemically soluble potassium-sodium-bismuthyl tartrate and insoluble quinine-iodide-bismuth, finely distributed in an oily suspension, including a small quantity of camphor, for use in syphilis, and Treupel Tablets, an anodyne and antipyretic.—HOWARDS AND SONS, LTD. (Ilford, near London), made prominent the Agotan brand of Phenylcinchoninic Acid for rheumatism, gout, brachial neuritis, neuralgia, and other affections, while Agotan ointment, together with Howard's Standard Ether, was also shown.—GENATOSAN, LTD. (Loughborough, Leicestershire), exhibited Sanatogen, Formamint, Genasprin, Cystopurin, a urinary antiseptic, Nasmint, a germ-killing snuff, and a wide range of vaccines.—SCHERING, LTD. (3, Lloyd's-avenue, London), presented Veramon, an analgesic which relieves pain without inducing sleep, is not habit-forming, and it is claimed to be an efficient substitute for morphia treatment; Medinal, a rapidly acting hypnotic and sedative; Neutralon for the treatment of hypersecretion, hyperchlorhydria, and gastric and duodenal ulcers consequent on hyperacidity, and Atophan a uric acid eliminant.—TETMAL, LTD. (45, Farringdon-street, London), who exhibited their preparation, Tetmal, demonstrated its use as an analgesic and antipyretic, and also called attention to Codlivex, a confection containing the lipoid of the liver, one tablet being equivalent to one tablespoonful of cod-liver oil.—THE BRITISH ALKALOIDS, LTD. (104, Winchester House), staged T.C.P. (Trichlorophenylmethyliodosalicylic acid in H_2O), a non-caustic and non-toxic Germicide, which, in addition to its destructive action on noxious germs, is claimed to have a vitalising action on leucocytes.—BARNOLD, LTD. (7 and 8, Milverton-street, London), had an exhibit showing Tabelle Cerevisiæ Compound (yeast with glycerophosphates) prepared to meet the demand for a standard yeast tablet, and Oracton Tonic Food Squares containing milk with calcium glycerophosphate.—BRISTOL-MYERS CO. (112, Cheapside, London) made prominent Sal Hepatica, an effervescent saline combination containing the principal medical salts which are found in the natural mineral waters of Europe and fortified with sodium phosphate. Ipana tooth-paste containing Ziratol, a hæmostatic antiseptic, was another exhibit of this firm.—J. C. ENO, LTD. (Pomeroy-street, London), showed the well-known "fruit" salt which may be taken during effervescence or after effervescence has subsided.—DIMOL LABORATORIES, LTD. (40, Ludgate-hill, London), displayed Dimol, which, prepared in the form of pulverettes and also in the form of syrup, pastilles, lavage powder, ointment, snuff, dentifrice, and dusting powder, is a bactericide 35 times more efficient than pure phenol. The chemical constitution of Dimol, $C_6H_3(CH_3)_2(OCH_3)OH$, reveals the presence of a phenyl radical, but this is not split off in its passage through the intestine; Dimol is voided with the fæces, unchanged. Dimol has a coefficient of 35·0 and is free from toxicity. It is indicated in the treatment of putrefactive and other bacterial invasions of the intestinal tract.—ICHTHYOL CO., LTD. (18, Adam-street, Adelphi, London), showed their product made from the raw material obtained from quarries at Seefeld in the Tyrol. It is a uniform product with a high sulphidic sulphur content.—JEYES SANITARY COMPOUNDS CO. (Victory House, 99, Regent-street, London) showed various Cyllin preparations; and NEWTON CHAMBERS AND CO., LTD. (311, Gray's Inn-road, London), Izal preparations.—MONSOL GERMICIDES, THE MOND STAFFORDSHIRE REFINING CO. (Distributors, Thomas Christy and Co., 4–12, Old Swan-lane, Upper Thames-street, London) had an attractive exhibit of this new germicide for which high efficiency is claimed, a remarkable freedom for irritant effects common to antiseptics of the phenol type, and low toxicity, together with a high degree of penetrative power. It is put up in many convenient forms, liquid, ointment, lozenges, and so forth.—THE THERMOGENE CO., LTD. (Haywards Heath, Sussex), had a fine display of their medicated wadding.—MANSONS (LONDON), LTD. (101, Hatton-garden), made a particular feature of Lipocithine as a remedy for tuberculosis, anæmia, neurasthenia, and for completing rapid convalescence.

THE HOFFMANN-LA ROCHE CHEMICAL WORKS, LTD. (51, Bowes-road, London), drew attention to their

preparation Allonal (Allyl-isopropyl-barbiturate of pheny ldimethyl-dimethylamino-pyrazolon) a synthetic non-habit-forming hypnotic and analgesic which relieves pain of all kinds and gives sleep, and to Isacen (diacetyl-di-hydroxyphenyl-isatin) a tasteless, odourless, non-toxic aperient, which is agreeable to take and safe and mild in action.—BENGUE AND CO., LTD. (24, Fitzroy-street, London), had an attractive exhibit which included Muthanol, a suspension of bismuth hydroxide and mesothorium bromide in sterile olive oil, a radio-active spirillicide, Euphorian Ampoules, entero-antigens, a polyvalent coliform vaccine, prepared from the intestinal flora, for chronic non-contagious diseases, Arhemapectyl, a new blood coagulant, and Vittel Natural Mineral Water (Grande Source) imported from the spa.—THE SANDOZ CHEMICAL WORKS (5, Wigmore-street, London) called attention to their Calcium Sandoz produce from glucose, which is readily absorbed and assimilated and can be given by the mouth intravenously or intramuscularly. Femergin (ergotamine tartrate) the active specific alkaloid of ergot of rye, Lobelin for the relief of grave respiratory troubles of central origin, and Scillaren, the pure stable cardio-active and diuretic glucoside of squill, were also prominently exhibited.—THE SACCHARIN CORPORATION, LTD. (72, Oxford-street, London), presented their Novocain in powder, tablets, and in sterilised solution in ampoules and bottles. This preparation contains no cocaine.—JOHN MORGAN RICHARDS AND SONS, LTD. (46–47, Holborn Viaduct, London), who are the agents for McKesson and Robins, New York, showed Lactopeptine for digestive disturbances, and Antikamnia, which is analgesic, antipyretic, and anodyne, in powder and tablets.—Among the variety of Collosol preparations prepared by the CROOKES LABORATORIES (BRITISH COLLOIDS, LTD.) (22, Cheniesstreet, London), Collosol Lactalumina (colloidal aluminium hydroxide) was shown and a more recent development, the same preparation with phenolphthalein 4 gr. per ounce, Collosol Lactalumina Laxative. Collosol Cod Liver Oil Emulsion 50 per cent. was another preparation calling for notice.

ANGLO-FRENCH DRUG CO., LTD. (238A, Gray's Inn-road, London), showed special pharmaceutical preparations, Adrepatine, a pluriglandular compound for the treatment of hæmorrhoids and other pluriglandular products, as well as orargol, colloidal gold-silver for general antisepsis, internal and external.—ENDOCRINES, LTD. (72, Wigmore-street, London), in addition to their large display of endocrines, showed a number of standardised endocrine products including Anabolin which has proved successful in the treatment of hyperpiesia, and Paracalcin, a standardised parathyroid available in tablet form. Attention was also drawn to Hepatic Extract for the reduction of high blood pressure. The stall of this firm contained a large number of useful books and brochures dealing with the subject of gland treatment which were at the free disposal of medical men.—ARMOUR AND CO., LTD. (Queen's House, Kingsway, London), had a representative exhibit of endocrines and digestive ferments including corpus luteum substance, orchitic substance, suprarenal crystals, and mixed gland materials.—G. W. CARNRICK CO. (40–42, Lexington-street, London) also showed endocrine remedies. Rythmin for constipation, Mammagen for defective lactation, Viriligen for lowered vitality, Erythogen for anæmia, and Kinazyme for malnutrition being among them. A book on the subject of Organotherapy in General Practice is given free to members of the medical profession by this firm.—THE BRITISH ORGANOTHERAPY CO., LTD. (22, Golden-square, London), attracted attention by a fine display of organotherapeutical products which included "Opocaps" Lymphoid-Adrenal Co. for the symptoms resulting from influenza and infective fevers, "Opocaps" Enterostasin for chronic constipation, and "Opocaps" Plammoid Co. for the nausea and vomiting of pregnancy as well as Evatmine for asthma and urticaria.—REED AND CARNRICK (Distributing Agents: Coates and Cooper, 41, Great Tower-street, London) showed glandular preparations and pharmaceuticals, one of the most prominent of their products being Pancrobilin Brand Intestinal Digestant. Pancrobilin is a physiological product containing dehydrated bile (from pure ox-gall) in combination with the nucleo-enzymes of the pancreas, and is indicated in the treatment of all forms of constipation. Peptenzyme Digestant, which contains all the glands necessary for digestion, also received attention from many inquirers. The firm of Coates and Cooper also exhibited Salvitæ for use in disorders arising from perversions of nutrition, the claim being made that it is preferable to ordinary preparations of lithium and single salines as the collective action of its several constituents gives a much wider scope of usefulness.

DESHELL LABORATORIES, LTD. (1–3, Brixton-road, London), exhibited in several forms Petrolagar, a palatable emulsion containing 65 per cent. of pure medicinal paraffin and 10 per cent. of prepared agar, which is the emulsifying agent, no fermentative gums or soaps being used.—On the stall of the ANGIER CHEMICAL CO. (86, Clerkenwell-road, London) the emulsion of Petroleum with Hypophosphites bearing this firm's name attracted many visitors.—Liquid paraffin preparations were represented by KAYLENE, LTD. (7, Mandeville-place, London), who showed Kaylene (Colloidal Kaolin), Kaylene-ol—an emulsoid combination of Kaylene and Colonol Liquid Paraffin, and other preparations for eliminating intestinal toxins. The same firm also exhibited Spisbrod, a Swedish health bread which contains 100 per cent. of whole-grain rye.—NUJOL LABORATORIES (Albert-street, Camden Town, London). In addition to Nujol, the well-known intestinal lubricant and Cream of Nujol with Agar, this firm showed Mistol, a combination of menthol, camphor, and eucalyptol in pure mineral oil which, used in an atomiser, brings these medicaments into intimate contact with the mucosa of the nose and throat.

(To be continued.)

Obituary.

CHARLES GEORGE MACVICKER, M.B. R.U.I.

Dr. C. G. MacVicker, who died on August 30th in a Clifton nursing home, of a generalised staphylococcal infection, at the age of 64, had been in practice at Street, Somerset, for 28 years. A native of Londonderry, he studied medicine at Edinburgh University and Queen's College, Belfast, where he took high honours, qualifying in 1891. After that his life was spent in general practice in England, first at Almondsbury, near Bristol, then at Isleham, in Cambridgeshire, and from 1899 onwards at Street. Here he held various appointments, serving as medical officer to the Street District of the Wells Union, and to the Abbey Grange School for mentally deficient children. At the time of his death he was also senior medical officer to the Butleigh Hospital. One of his most important activities was in connexion with the Somerset County Nursing Association, of whose committee he was a member from its foundation. He was vice-chairman to the Parochial Church Council, a vice-president of the Church of England Men's Society, and of the Ringer's Guild, and the moving spirit in many other of the activities of the church. He was also a council school manager, served as a magistrate for some years, and as a member of the Somerset Archæological Society took a close interest in county antiquities.

A colleague writes: "Dr. MacVicker was not only a professional adviser to his patients; he was their friend, as he showed both in his kindly and solicitous care for their comfort and in his determination to give to everyone, no matter their social status, the fullest resources of his profession. Attractive in person, he looked a good deal younger than his age, and had an air of kindly interest in the matter in

hand, and a full share of the conversational aptitude of his native land, that made him a delightful companion. He was a faithful and loyal friend."

In 1895 Dr. MacVicker married Marion Churchill Churchill, eldest daughter of the Rev. E. B. C. Churchill, sometime vicar of All Saints, Portsea. Of their two surviving sons, the younger is a medical student.

NEWCOME WHITELAW BOURNS, M.D. BRUX.

Dr. N. W. Bourns died on Oct. 2nd at Wincanton, after an illness of nine months. He was born at Carrick-on-Shannon in 1852, and after studying at St. Bartholomew's Hospital became M.R.C.S. Eng. in 1879. At St. Bartholomew's he learnt from the senior anæsthetist, Mills, the administration in sequence of nitrous oxide, ether, and chloroform, which he adopted in hospital and private work with admirable success and remarkable safety to patients. After settling in South Kensington he was appointed anæsthetist to the Cancer Hospital, and in 1887 became the first regular anæsthetist to Westminster Hospital. With these duties he combined private practice, and his pleasing manner and address were highly appreciated by his many patients. On retiring Dr. Bourns joined some old friends in Somersetshire, where in the Blackmore Vale he had scope for his hobbies, particularly gardening and shooting. Some time ago an unfortunate motor accident laid him by for a year, but he recovered to enjoy life again.

WILLIAM NEWLANDS CLEMMEY, M.R.C.S. ENG.

Dr. Clemmey, who died suddenly on Sept. 27th at the age of 58, came of a family long established in Bootle, his father, Sir William Clemmey, having been twice mayor of the borough. As a student at University College, Liverpool, he distinguished himself in anatomy and surgery, and after service as house surgeon was, in 1896, appointed honorary surgeon at the Bootle Borough Hospital. This post he held till the day of his death, but it was not as a specialist in surgery that Dr. Clemmey found his chief work, for he also engaged in general practice, whilst the number of his professional appointments showed how wide his interests were. He served on the council of the Liverpool Medical Institution and took a warm interest in everything that made for the welfare of his medical colleagues. Always a hard worker and rarely giving himself a holiday, Dr. Clemmey latterly found his health failing and was compelled to give up much of his public work. This was especially regrettable, as he had been an admirable example of the professional man who is also a leader in civic life. Spending many years on the town council and on the board of guardians, he was always respected for his open sincerity, and latterly he had been made a justice of the peace.

Dr. Clemmey leaves two sons, of whom one has entered the medical profession.

ALEXANDRA DAY.—The collections on Alexandra Day in London last June amounted to £48,150, to which had to be added £1111 collected by steamship companies and £3615 of other income, making a total of £52,876. After deducting expenses there was a surplus of £44,536, which was £2619 more than last year.

NORFOLK AND NORWICH HOSPITAL.—A scheme has been drafted by which persons of limited income can be received as paying patients in this hospital. The plan turns upon an insurance scheme, the benefits of which may be secured by means of a yearly premium of £1 10s. Each member will be entitled to free in-patient and certain out-patient treatment for himself and his wife, and for children under 16. Those who join the scheme before Dec. 1st will be entitled to treatment as soon as the department is opened. The benefits of the department are not to be limited to the insured, but if there is sufficient accommodation any person whose income falls within the prescribed limits will be received at a stated weekly charge.

Public Health Services.

POLIOMYELITIS IN KINGSTON-UPON-HULL.

Dr. W. Allen Daley, medical officer of health for Hull, has presented to his health committee an interim report on the outbreak of acute anterior poliomyelitis and polio-encephalitis in the county borough during the last three months. The first case was notified on August 2nd, the onset having occurred on July 27th; the next notification was received on August 15th, and the third on August 16th, the onset having been on August 7th and 9th. There followed two notifications on August 17th, and one each on August 19th and 20th, all these notifications were belated, the onset having been on July 13th, 24th, and 30th, and August 3rd. This made six notifications for the week ended August 20th; in the following week seven notifications were received. On August 29th a circular letter was sent to medical practitioners in the area informing them of the prevalence of the disease, with the result that a number of cases of some weeks standing were notified within a few days. After that the lag between onset and notification was somewhat less, except for the cases where no doctor had been in attendance owing to the mildness of the onset, and notification was only made after a practitioner had been consulted because of paralysis or when a medical officer of the health department called on hearing from a health visitor or school nurse that a child had suddenly developed weakness of a limb.

Up to Oct. 1st, 88 notifications were received. In three cases the diagnosis has not been confirmed; the date of notification and onset of the remainder is as follows:—

Week ended—	Onset.	N.R.	Week ended—	Onset.	N.R.
July 16th	3	—	Sept. 3rd	11	17
,, 23rd	3	—	,, 10th	12	19
,, 30th	3	—	,, 17th	8	14
Aug. 6th	4	1	,, 24th	8	14
,, 13th	11	—	Oct. 1st	1	7
,, 20th	8	6		—	—
,, 27th	13	7		85	85

N.R. = Notification received.

The usual onset has been a complaint of headache and nausea; often with pain in the back of the neck and occasionally sore-throat. The very young children went off their food and their legs, if they had begun to walk, and showed the symptoms associated in the lay mind with "teething." The weakness of a limb was often not noticed until the child had recovered its usual health and started to walk again; the mother then observed that one of the legs was being "dragged."

Three cases proved fatal—one from the acute ascending type of the disease; the second, a man of 33 years, after an illness of three days' duration in which he showed paralysis only a few hours before death; and the third from the cerebral type of the disease. During the past two weeks an increasing number of very mild cases has been discovered, with definite paresis clearing up entirely (so far as can be ascertained by ordinary examination) within a few days. No relationship has been established between the severity of the onset and the degree of paralysis.

The cases have been distributed uniformly throughout the city; there is no special incidence among the very poor, nor are those who are particularly well-housed and well-fed exempt. One group of three patients who played together has occurred, and in one house a second child developed the disease 14 days after the onset of the first, and four days after the removal of the first case to hospital. One of the early cases is known to have been in contact at a neighbouring seaside resort with a case from Lancashire which subsequently proved fatal. Otherwise no contact between the cases and no sources of infection nor "carriers" have been discovered. The possibility of a contaminated milk-supply was negatived early in the outbreak.

The ages of the 85 cases are as under :—

Under 1 year	.. .. ..	..	3
1 year and under	2 years	..	16 } 60*
2 years	5 ,,	..	41
5 ,,	10 ,,	..	15 } 20†
10 ,,	15 ,,	..	5
15 ,,	20 ,,	..	2
20 ,,	30 ,,	..	2
30 years and upwards		..	1
			85

* Under 5 years. † Aged 5 to 15 years.

The muscles involved in the 85 genuine cases have been those of : one arm, 9 ; both arms, 1 ; one leg, 39 ; both legs, 25 ; one leg and one arm, 2 ; both legs and one arm, 3 ; both legs and both arms, 1 ; leg and face, 1 ; face, 4.

As it is unknown how long the infection remains in the throat, it was necessary, Dr. Daley writes, to decide what measure of isolation should be required. This period was fixed, without any special reason, at five weeks, and all patients were isolated at home or in hospital from the time of notification until five weeks from the onset. Patients and house contacts were advised to use throat gargles of 1 per cent. hydrogen peroxide or 1 in 500 permanganate of potassium, and this was supplied free of charge on application.

The Wassermann reaction of a convalescent adult patient being found negative, his consent was obtained to the use of his blood for the preparation of serum for the treatment of acute cases. As it was unusual to receive notifications until after the onset of definite paralysis, when serum would presumably be of little or no value, its value has not been ascertained.

Thirty-eight cases were admitted to the city hospital where in most cases the cerebro-spinal fluid was found to be under increased pressure, clear but showing an excess of globulin and of lymphocytes. The limbs were put up in the neutral position ; gentle massage and muscle training were not started until all the tenderness had gone. On discharge from isolation, provision is made for their treatment under the orthopædic scheme ; actinotherapy will also be used at the municipal light clinic. The improvement in the movement of the limbs as a result of simple rest and prevention of stretching has been very striking.

If, Dr. Daley concludes, the " carrier " theory of infection in this disease is correct, it is necessary to assume that during the past few months there have been many " carriers " in the city, and that the proportion of those exposed to infection who succumb to it is very small.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED SEPT. 24TH, 1927.

Notifications.—The following cases of infectious disease were notified during the week :—Small-pox, 125 (last week 126) ; scarlet fever, 1958 ; diphtheria, 1149 ; enteric fever, 91 ; pneumonia, 637 ; puerperal fever, 37 ; puerperal pyrexia, 108 ; cerebro-spinal fever, 9 ; acute poliomyelitis, 39 ; acute polio-encephalitis, 4 ; encephalitis lethargica, 12 ; dysentery, 1 ; ophthalmia neonatorum. 103. No case of cholera, plague, or typhus fever was notified during the week.

Eighteen cases of poliomyelitis and polio-encephalitis (taken together) were reported from the East Riding of Yorkshire, 14 of them from Kingston-upon-Hull (only 7, as noted above, in the subsequent week), the others from the rural districts of Beverley, Patrington, and Sculcoates. It must be some years since so low an incidence as 12 has been reported for encephalitis lethargica.

Deaths.—In the aggregate of great towns, including London, there was no death from small-pox, 3 (0) from enteric fever, 10 (1) from measles, 4 (0) from scarlet fever, 15 (4) from whooping-cough, 33 (5) from diphtheria, 92 (9) from diarrhœa and enteritis under two years, and 42 (11) from influenza. The figures in parentheses are those for London itself. The number of stillbirths registered during the week was 264, including 38 in London.

Correspondence.

"Audi alteram partem."

THE BROAD ROAD OF HEALTH.

To the Editor of THE LANCET.

SIR,—Thomas Carlyle in a famous dictum labelled the majority of mankind as fools, Sir Thomas Horder puts a point to this in saying that all but a few fools can secure health.

The perfect human being (physically and mentally) does not exist. All of us fail more or less to reach the standard of perfect health—most of us fail lamentably—a very large proportion are suffering from organic disease, functional disorder, deformities, maldevelopment, and malnutrition. We are, according to Sir Thomas Horder, all in the same category—fools or the victims of mischance. We have failed to " control the car," or to take sufficient care " at the cross-roads," we have driven the machine too fast or we have had no luck. True, the road has been broad and the margin of safety in some respects wide enough. Nevertheless, Nature is actually antagonistic to health, since all life is a prolonged struggle to mould the environment, or to adapt the organism to it. Fortunately, Nature forgives much and our reserves are often considerable.

But the net result, so far as civilised humanity is concerned, is a hideous array of repair shops and mechanics, lining the roads of life and working overtime. Sir Thomas Horder has cleverly omitted these features of the landscape from his Utopian picture. Is not the explanation to be found in the appalling ignorance on the part of the drivers of the cars of the first principles of the mechanics, requirements, and driving of their machines? Sir Thomas Horder evidently does not think so since he does not include a knowledge of the art of living as a means to safety. He is apparently of the opinion, as are also some scientists, that unless the layman can be supplied with the whole scientific truth down to the last detail, and unless the whole body of scientific opinion is in agreement as to the truth to the uttermost detail, no information should be given at all. The suggestion that the Medical Research Council should institute a special inquiry into the bread question was met with the reply that since " Vitamin B " possibly consisted of several vitamins and that since some expert had discovered a toxic element in the germ of cereals, it was not desirable to commend any particular article of food to the public.

Meanwhile, a very large section of the public are suffering from malnutrition and are totally ignorant of the elementary principles of dietetics. Sir Thomas Horder thinks they will be content if we refer them to his stalwarts and tell them that the physical fitness of these strenuous fellows is a " spontaneous acquirement." Compared to the dangers of such reactionary teaching any over-enthusiasm as to the virtues of wholemeal bread or an over-estimation of the results of a faulty dietary are but trifles.

I am, Sir, yours faithfully,

S. HENNING BELFRAGE.

Gloucester-place, W., Oct. 3rd, 1927.

CANCER, ADRENALIN, AND IMMUNITY.

To the Editor of THE LANCET.

SIR,—Dr. Lumsden makes the statement in his letter on Cancer and Adrenalin (THE LANCET, Oct. 1st, p. 733) that the whole trend of his recent work indicates that " by appropriate local treatment an active immunity can be induced which is not local but *general*," so that the animal is " immune against subsequent inoculations of the same tumour in every part of its body." I am under the impression that it has been generally known for over 20 years that a tumour undergoing regression from various causes produces an immunity which is not local but general.

Dr. Lumsden cannot appreciate the significance of his own statement when he says that "the two drawings of microscopic specimens he (Cramer) published are such as might be obtained from certain areas in untreated tumours and are to my mind quite unconvincing." This very similarity is emphasised in my paper at considerable length (pp. 62 and 63). The paper is, in fact, entitled "The Action of Radium on Transplanted Mouse Tumours and its Relation to the Spontaneous Arrest of Their Growth." It is stated there that where regression is induced experimentally "the tumour shows in an exaggerated form the appearances met with in more localised areas in a considerable proportion of the tumours propagated." The evidence presented is interpreted as showing that the regression of a tumour under the influence of radium and of adrenalin is not due entirely to a toxic or lethal action on the tumour cells, but that an important factor in the regression is the exaggeration of a process which occurs spontaneously in a more localised form and which consists in the proliferation of the connective tissue elements of the stroma. The trend of recent work on the therapeutic action of radium is in the same direction.

It was in the course of these experiments that the phenomenon of "immunity" was observed by me, and I am, therefore, not likely to underrate the value of this observation. The part played by the developing immunity in the process of regression was studied in considerable detail by B. R. G. Russell and by W. H. Woglom.

This may be a suitable opportunity to summarise very briefly the main facts which have been established concerning this phenomenon of immunity.

1. If a tumour regresses either spontaneously or as the result of experimental applications, the animal is resistant against subsequent transplantation of the same tumour and to a lesser extent of other tumours. This resistance to transplantation is now generally called "immunity."

2. The same condition can be induced by the injection of normal tissues, especially embryonic tissues.

3. If a transplanted tumour has been established before immunity is induced, the established tumour cannot be made to regress. With some strains a retardation of growth has been observed.

4. This condition of immunity does not protect an animal against the genesis of a new spontaneous tumour, nor can an animal with a spontaneous tumour be rendered immune against the experimental transplantation of its own tumour.

5. J. Fibiger has recently shown that animals which have been rendered immune by the repeated injection of normal tissues will develop tar tumours quite as readily as normal non-immune animals. But the metastatic spread is distinctly inhibited in the immune animals, so that in his experiments the number of immune animals with metastases was approximately one-half of the non-immune animals with metastases.

I am, Sir, yours faithfully,

W. CRAMER.

Imperial Cancer Research Fund, London, W.C. 1,
Oct. 1st, 1927.

THE LATE PROF. ADRIAN STOKES.

To the Editor of THE LANCET.

SIR,—With reference to the obituary notice of the late Prof. Adrian Stokes which appears in your issue of to-day, several statements appear therein which unfortunately have no historical basis as to fact, and in justice both to the living and the dead I think should be corrected.

With regard to mobile laboratories, the construction of the first of these was undertaken by the Medical Department of the War Office directly after the outbreak of war in August, 1914. In that year it functioned in battle areas north of the *Lys* and thereafter was entirely responsible for the bacteriological investigations in Belgium of all cases in the outbreak of typhoid fever among the Belgian civilian inhabitants in the winter of 1914–15 in the zone occupied by the British Second Army and also by the French Army on our left flank. This laboratory was in charge of a Territorial officer who had been seconded from the 3rd City of London Field Ambulance who, later, was appointed to act as my sanitary officer and was given special authority to carry out all necessary measures for controlling and suppressing the epidemic by the Belgian Ministry of the Interior. This epidemic was considered to have terminated by the beginning of June, 1915.

The second laboratory—a converted motor caravan—was furnished by the Lister Institute who, within a week of the declaration of war, had made a collective offer of its workers for service under the War Office followed by an offer of a mobile laboratory, the latter being immediately accepted. This laboratory was in charge of Major S. D. Rowland and proceeded to France, being stationed at General Headquarters at St. Omer where it remained until its transfer to the Second Army when it was attached to No. 10 Casualty Clearing Station at Remy Siding and opened out for work early in July, 1915. It was upon the occasion of this transfer that Adrian Stokes first came to the Second Army, he being attached to Major Rowland's mobile laboratory and acting as his assistant until 1916, when Rowland was transferred at his own request to Etaples to investigate cerebro-spinal fever, subsequently contracting the disease there from which he died.

My appreciation of Stokes's services and ability was such that I had no hesitation in securing his appointment as commanding officer to succeed Rowland, this being, in fact, Stokes's first command of a mobile laboratory. (Owing to their increasing numbers, it became necessary, in 1915, to number serially the mobile laboratories. In this way the first War Office built laboratory became known as No. 4 Mobile (Hygiene) Laboratory and the Lister Institute converted caravan as No. 1 Mobile (Bacteriological) Laboratory.)

By this time some five mobile laboratories had become connected with the Second Army, and I would here say that the repeated successful detection and isolation of typhoid (and other) carriers was regarded by all of them without exception as an ordinary laboratory achievement.

In justice to all concerned I would like to make it clear beyond all doubt that Stokes was not transferred to the Second Army until *after* the termination of the epidemic. He took no part, officially or otherwise, in the operations conducted by the medical service of the Second Army, under my direction, for dealing with the typhoid epidemic amongst the civil population of Belgium which occurred in the winter of 1914–15.

The history of this epidemic remains to be written; it is the story of a grave and widespread outbreak—numbering thousands of cases—amongst the civil population of a foreign country in the occupation of allied (and British) troops in an intensely active war zone in which British medical officers were given the honour and the responsibility for conducting the whole of the operations necessary for coping with the disease. They did so successfully, and I would like to take this opportunity to make an appeal to all in possession of relevant documents and records (whether copies or originals) to communicate with me in order that some organisation might be set up for duly recording its history and noting its clinical and epidemiological lessons.

I am, Sir, yours faithfully,

ROBERT PORTER,
Maj.-Gen. (ret.); formerly Director of Medical Services, Second Army, B.E.F.

27, The Avenue, Beckenham, Kent.
Oct. 1st, 1927.

*** We have submitted Sir Robert Porter's letter to "J. A. R.," the author of the obituary of Prof. Stokes, who has sent us the reply which follows:—

"I must emphatically appeal against Sir Robert Porter's contention that the obituary notice of the late Adrian Stokes, which appeared in THE LANCET,

contained 'statements . . . which have no historical basis as to fact.' Others can bear out my narrative with regard to Stokes's discovery, essentially through his own enterprise and initiative, of the typhoid carrier in the Guards' Brigade in 1914, thereby anticipating, in fact, the functions of a mobile laboratory which was not apparently then available to do the work. I do not imply that Stokes instigated the creation of mobile laboratories, but merely that he 'anticipated the idea.' Nowhere do I suggest, as Sir Robert Porter seems to think, that Stokes's work in the Belgian epidemic was done during service with the Second Army. In fact, it is explicitly stated that Stokes took charge of the mobile laboratory at a later period. Nevertheless, as I worked intimately with him at the hospital at Malassise near St. Omer to which some 800 Belgian civilian cases of typhoid fever were evacuated, and as I witnessed from day to day the ready enthusiasm with which he coöperated with the officers of the Friends' Ambulance Unit and the Sanitary Officer of the Second Army, and the thoroughness with which he and his colleague, the late Cecil Clarke, worked in their laboratory to ensure that no civilian carriers should be returned to the occupied areas to cause further danger to the troops—for these reasons I do feel justified in my remarks concerning Stokes's participation in this not unimportant episode of the war. I am careful to refer to him as 'an unofficial liaison officer' for at this period, as well as later at the Casualty Clearing Station, he was (although employed in a specialist capacity) continually stimulating all those with whom he came in contact, whether civilian or military, in their joint task of helping to protect the British forces from infectious disease. The hospital at Malassise was not under the medical services of the Second Army, but it played a very important part in dealing with the typhoid epidemic amongst the civilian population in the early months of 1915. No history of that epidemic, which as Sir Robert Porter says still remains to be written, would be complete if it omitted to record in some way the valuable services of the bacteriologists at the Malassise Hospital, a unit working under the ægis, if I remember rightly, of General Headquarters. I believe the commanding officers of the hospital would be only too glad to support this opinion and hope that Sir Robert Porter will revise his verdict as to the historical inaccuracies of one who had the privilege of living in the same mess with Adrian Stokes for more than two years both before and during his service with the Second Army."

MOSQUITO CONTROL: AN HISTORICAL NOTE.

To the Editor of THE LANCET.

SIR,—To Dr. J. Balfour Kirk, medical officer of health, Port Louis, Mauritius, I owe a copy of a very interesting and thoughtful book entitled, "A Voyage to the Island of Mauritius (or Isle of France), the Isle of Bourbon, and the Cape of Good Hope, &c. With observations and Reflections upon Nature and Mankind." It was written by a French officer and my copy is a translation from the French by John Parish and is dated 1775. It takes the form of a series of letters written to friends of the author. On looking through it I came upon the following note in Letter XXV. :—

> "It has been attempted, but without success, to bring frogs here, that they might eat the eggs which the mosquito lays upon the surface of the standing waters."

At this time the edible freshwater fish, the gourami, had been imported into Mauritius from Batavia and the Chinese goldfish had also been introduced, presumably for ornamental purposes. For mosquito control, however, as the passage indicates, recourse was had to frogs, and it was not until much more than a century later that "millions" fish were brought to the island to cope with the larvæ of *Anopheles costalis*, or *gambiæ*, as it is now called, and also, incidentally perhaps, for their existence was not at that time known, with those of *Anopheles funestus*, the mosquito discovered in Mauritius by Mr. Malcolm MacGregor during his entomological survey of the colony in 1922–23.

I am, Sir, yours faithfully,

ANDREW BALFOUR,
Director, London School of Hygiene and Tropical Medicine.

Oct. 4th, 1927.

POOR-LAW HOSPITALS.

To the Editor of THE LANCET.

SIR,—The correspondence on the above subject has been most interesting, especially the letter of Dr. H. Bailey in your issue of Sept. 3rd, in its advocacy, from actual experience, of the view that an infirmary benefits if its superintendent is allowed a limited outside practice. I would suggest, however, that such aspects of the infirmary as its facilities for surgery, research, and post-graduate work, are subsidiary to the question of future status and policy. This I suggest is the main issue, going to the root of the whole problem. The developments of recent years would all seem to justify a progressive policy for the infirmaries, which implies a definite break with tradition. Undoubtedly and of necessity with such a change, professional skill and experience as distinct from purely administrative ability would receive greater recognition—although a combination of the two will probably be always the most desirable—while it will be recognised in time as a function of the infirmary to help in teaching, research, &c., according to its scope.

Dr. Bailey, in the letter already referred to, after describing successful efforts to popularise a particular infirmary, adds: "Of course, I am quite aware all this is illegal"! This is a cogent example of the anomalies under which the Poor-law infirmary functions to-day.

I am, Sir, yours faithfully,

F. J. O'DONNELL, F.R.C.P.I.

Dublin, Oct. 3rd, 1927.

MISLEADING QUALIFICATIONS.

To the Editor of THE LANCET.

SIR,—Is anyone entitled legally or ethically to the designation of F.R.C.S. without specifying the Royal College of Surgeons of which he is a Fellow unless indeed, he be a Fellow of all three Royal Colleges? This point appears to be of ethical importance in view of the countenance given by the Representative Body of the British Medical Association (see THE LANCET, July 23rd, 1927, p. 188) to the publication of names and qualifications of the medical staff of therapeutic institutions. In the annual report of a cottage hospital outside London, issued to the local public, qualifications of the medical staff are published and certain of the staff have gained much public esteem in comparison with the others by being designated F.R.C.S., as are so designated the London consultants attached, without any specification as to their Colleges; the consultants only are Fellows of the Royal College of Surgeons of England.

I am, Sir, yours faithfully,

Sept. 24th, 1927. ETHICS.

CIVIC HONOUR FOR A MEDICAL MAN.—Dr. Robert de la Poer Beresford, of Derwent Grange, nr. Oswestry, on Sept. 22nd received the honorary freedom of Oswestry, on a scroll contained in a silver casket, in recognition of his services as medical officer of health for Oswestry for 59 years, and as Mayor of Oswestry for two years—in 1900 and 1910.

INNOVATION AT MANCHESTER INFIRMARY.—The Manchester Royal Infirmary was open for inspection on the afternoon of Sept. 30th for the first time in its history and large crowds took advantage of the occasion to visit the X ray department and the operating theatres, whilst many ex-patients revisited the scenes of their recovery. Nurses and officials acted as guides and showed the visitors the work carried on in the infirmary.

Medical News.

ST. GEORGE'S HOSPITAL.—The annual dinner of the medical school was held on Saturday, Oct. 1st, at the Hyde Park Hotel, Sir Humphry Rolleston, consulting physician to the hospital, and Regius Professor of Medicine, Cambridge, presiding. The toast list was brief, but good speeches were provided. The toast of "Prosperity to the School" was proposed by the Chairman, who naturally laid stress on the old association between his University and St. George's Hospital, while he pleased his audience by a hearty recognition of the valuable part which games play in corporate training and by special words of commendation for the student athlete. The toast was replied to by the Dean, Dr. Anthony Feiling, who was able to report general progress as shown by a good entry, and a high percentage of success in examinations during the past year. He considered that it did not devolve upon him to give the details which usually came from the treasurer as to the financial position of the hospital, but he was able to state that, though there was ample scope in the conduct of the hospital for the intervention of a millionaire, the pecuniary position had improved; and he particularly desired his audience to understand that no movement, either now or contemplated in the future, would endanger the full accommodation of a first-class clinical medical school. The toast of the Chairman's health was eloquently given by Dr. J. S. Collier, who in the course of enumerating Sir Humphry Rolleston's many claims upon the admiration and gratitude of St. George's Hospital, said that he had been a pioneer in a remarkably useful piece of educational work, when he instituted his series of informal lectures on pathology, to which all-comers were admitted without fees. Sir Humphry Rolleston briefly replied.

ST. MARY'S HOSPITAL.—The annual dinner of past and present students of St. Mary's Hospital Medical School was held at the Connaught Rooms, London, on Saturday, Oct. 1st, when there was a large gathering of men and women students, and the invited guests included the Mayor of Paddington, Air-Marshal David Munro, and Vice-Admiral Arthur Gaskell, R.N. Dr. Wilfred Harris, who presided, remarked that the hospital had always suffered from scarcity of beds, now to be relieved by the extension in progress and the exploitation of the island site recently acquired. Small wards for paying patients of moderate means were urgently needed. They would be a good thing for the medical school, they would provide a number of paid appointments, and be of real service to the practitioners using the hospital. His address was sprinkled with amusing stories of early hospital days and humorous maxims. Mr. A. R. Prideaux, chairman of the Hospital Board, who replied to the toast of "The Hospital and Medical School," said that a number of beds would be available in the course of the present month, and final completion was expected on April 30th next, when it was hoped their Majesties would open the building. Two new operating theatres, 46 additional beds (making 350 in all), would bring the hospital into line with other metropolitan teaching hospitals. The island site, purchased at a cost of £65,000, to come into their possession in November next, would safeguard for all time the future of St. Mary's. Dr. C. M. Wilson, who as Dean of the Medical School also replied, recounted the sorrows of a dean in balancing a budget, and dwelt on the advantages to the medical student of a school of moderate size, in which there was far more chance of securing a house appointment. He gave some figures to show that scholarship and athletic prowess are not antagonistic, and concluded with recommending St. Mary's as a school which had grafted on the peculiarities of the smaller school the academic and university advantages of the larger school. The toast of "The Chairman" was proposed—from a wealth of local knowledge which was warmly applauded—by Mr. D. C. L. Fitzwilliams, and Dr. Harris brought the more formal proceedings of the evening to a close with a neat little speech of gratitude and appreciation.

ST. BARTHOLOMEW'S HOSPITAL.—The Annual Old Students' Dinner of the hospital was held on Monday, Oct. 3rd, in the Great Hall of the hospital, Dr. Morley Fletcher, the senior physician, presiding over a large assembly of St. Bartholomew's men and their guests. There were no speeches, but the chairman, in a short address, reviewed recent events as they affected the medical college and the prosperity of the hospital. As proving the antiquity of the college, he indicated that some 250 years ago the formation of a library for the use of the authorities and the students was recorded, while the annual dinner, a more recent institution, he considered to have sprung out of the hospitable habit displayed by certain members of the staff who gave private dinners at the opening of the new session. But there was evidence that in 1840 a regular dinner was attended by the staff and students after an opening address had been given. Later, in 1862, an official notice appeared in the *Times* that an old students' dinner would be celebrated at the famous Albion Tavern, after which the function became annual; and he mentioned that the present senior consulting physician to the hospital, Sir William Church, now in his ninety-first year, had attended some 60 annual dinners. Dr. Morley Fletcher then made the announcement that the new surgical block, so long projected, was now in course of actual construction on the site of the old Christ's Hospital; it was planned, he said, to consist of five wards accommodating 250 patients. In speaking of the changes brought about by the past year, he referred to the deaths of Dr. Claye Shaw, for so many years lecturer in the college on psychological medicine, of Mr. Alban Doran, Prof. Strangeways, and Sir Arthur Shipley, once a student of the school. All, he added, would deeply regret Sir Frederick Andrewes's resignation of the post which he had held so long and with so much distinction. They now possessed, he said, three new professors at the school, W. E. Le Gros Clark, Hamilton Hartridge, and E. H. Kettle, respectively in anatomy, physiology, and pathology, and to these he extended the welcome of the meeting, while he congratulated one of their students, Dr. Burt White, on gaining the gold medal for obstetrics in the University of London. He concluded by saying never had better opportunities been offered to students by the college, though the financial burden was very serious.

MIDDLESEX HOSPITAL.—The annual dinner of past and present students of Middlesex Hospital was held at the Savoy Hotel, London, on Tuesday, Oct. 4th, Mr. Somerville Hastings presiding over a record assembly of Middlesex men and their guests. Mr. Hastings, in proposing the toast of "The School," gave a stirring account of the spirit in which the activities, both charitable and scientific, are being carried on while the destruction and reconstruction of the premises is proceeding. He claimed that the charge of the sick poor, the training of the nurses, and the pursuit of research were all proceeding as usual, while he said that new activities were being projected for their model institution that was rising in Marylebone. New departments were being made, and there would be many more laboratories, all of which would entail more officers, more men, and more money. The builders, he said, were now starting work on the first section of the new edifice, while a strictly anonymous donor had given £160,000 for the building of a nurses' home outside their island site, thus leaving room for additions to the hospital proper, so that, as well as increased ward space, it would be possible to provide some paying wards, a development of hospital activity most valuable to the public. Their model hospital, he assured his audience, would be a centre where the sick poor would remain its first charge, but where research could be carried on, and all local activities catered for. He relied for their success on the esprit de corps of the old friends and the new students. The toast was replied to by Mr. S. G. Asher, Chairman of the Board, Mr. Eric Pearce Gould, Dean of the School, and Mr. E. G. Muir, senior Broderip Scholar, representing the students. Mr. Asher, in reply, while admitting the anxieties of finance, pointed to the steady output of first-class work in research from the two great special departments of the hospital, which they owed to Sir John Bland-Sutton and Sir Samuel Courtauld, and again roused curiosity as to the generous donor by alluding to the magnificent donation for the erection of a nurses' home. Mr. Eric Pearce Gould related the remarkable successes of the students in the various schools, and wittily compared the rapid developments of the new hospital, with its foci here and metastases there, to the growth of a tumour. He had heard that lead had been used beneficially in association with certain of these growths, but the metal which Middlesex required was gold. Mr. Muir, with amusing directness, took the opportunity of the presence of influential members of the Board to point out a great many things which the students would like to have provided for them in the new buildings. He described the sort of Ritz accommodation which they would like, terminating with a plea for a swimming bath and mixed bathing. The toast of "The Guests" was proposed by Mr. Comyns Berkeley, to which Major Ian Hay Beith and Air Vice-Marshall D. Munro replied, each contributing to the gaiety of the evening.

UNIVERSITY OF BRISTOL: ASSOCIATION OF ALUMNI. The sixth annual dinner of the London branch of this Association will be held on Friday, Oct. 28th, at 7.30 for 7.45 P.M., at the Criterion Restaurant, Piccadilly-circus. Viscount Haldane will preside, and Prof. Francis Francis (Pro-Vice-Chancellor of the University) will be the guest of the evening. Members of the University and past members of its associated colleges may apply for tickets for themselves and their friends to Dr. Elizabeth Casson, Holloway Sanatorium, Virginia Water. A business meeting of the branch will be held, by invitation of Mr. C. A. Joll, at 64, Harley-street, W., on Wednesday, Oct. 19th, at 6.30 P.M.

UNIVERSITY OF MANCHESTER.—At recent examinations the following candidates were successful:—

DIPLOMA IN PUBLIC HEALTH.

Part I.—J. S. Smith.
Part II.—James Cumming, Barbara M. Knight, M. V. Menon, and S. P. Wilson.

HARVEIAN SOCIETY.—A clinical meeting of this society will be held at 4.30 P.M. on Thursday, Oct. 13th, at the Hospital for Epilepsy and Paralysis, Maida-vale, London, W.

MEDICO-LEGAL SOCIETY.—A meeting of this Society will be held at 11, Chandos-street, Cavendish-square, W. 1, on Thursday, Oct. 27th, at 8.30 P.M., when Sir William Willcox will give a presidential address.

ROYAL SANITARY INSTITUTE.—A sessional meeting is to be held on Friday, Oct. 28th, at 4.30 P.M., in the Council Chamber, Town Hall, Newcastle-upon-Tyne, when discussions will take place on (1) the Influence of Overcrowding upon Tuberculosis, with special reference to the New Housing Schemes; (2) the New Factories Bill; and (3) the Smoke Problem on Tyneside—How is it to be Tackled? Dr. Charles Porter will take the chair.

CHILD-STUDY SOCIETY.—A series of lectures and discussions is to be held by this Society at the Royal Sanitary Institute, 90, Buckingham Palace-road, on Thursdays, at 6 P.M. On Oct. 13th Dr. E. A. Hamilton-Pearson will speak on the Unadopted Child. Further particulars are obtainable from the hon. secretary of the society at the Institute.

THE PRIX HOLLANDAIS IN ANTHROPOLOGY.—At the closing meeting of the Congress of the International Institute of Anthropology, in Amsterdam, on Sept. 24th, it was announced that the Prix Hollandais, worth over £600, for the best work in physical anthropology or pre-history, had been awarded to Miss Garrod, daughter of Sir Archibald Garrod, Regius Professor of Medicine in the University of Oxford, for her paper on the new Gibraltar skull.

CALEDONIAN MEDICAL SOCIETY.—The annual meeting and dinner of this society will be held on Friday, Oct. 14th, under the presidency of Dr. Angus MacGillivray, chief of the Dundee Highland Society. The meeting will be held in the University College, Dundee, and the dinner in Kidd's Rooms, South Lindsay, West Dundee. On the Saturday the members will pay a visit to St. Andrews on the invitation of the University Court.

BELGRAVE HOSPITAL FOR CHILDREN.—A series of clinical meetings will be conducted by members of the staff of this hospital, whose address is 1, Clapham-road, London, S.W. 9. The first will be on Oct. 12th (Dr. Edmund Cautley), the second on Nov. 9th (Mr. Sidney Boyd), and the third on Dec. 14th (Dr. M. Sydney Thomson). Medical practitioners are invited. There will be tea at 4 P.M. and the meetings will be at 4.30.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—On Tuesday, Oct. 11th, at 4 P.M., Mr. Mayou will give a special demonstration for the Fellowship at the Central London Ophthalmic Hospital, Judd-street, London, W.C. This will be free to members of the medical profession. A clinical course continuing for two more weeks is in progress at the Central London Throat, Nose and Ear Hospital. Almost the whole day can be spent at the hospital. On four successive Wednesdays, at 5.15 P.M., beginning on Oct. 12th, Dr. C. B. Heald will give a series of lecture demonstrations intended for general practitioners who wish to familiarise themselves with recent advances in treatment by electrical methods. An all-day course in Diseases of Children will be given at the Paddington Green Children's Hospital, and the Victoria Hospital for Children, from Oct. 17th to 29th. Also, beginning on Oct. 17th, there will be a two weeks' course in gynæcology at the Chelsea Hospital for Women. During October and November a comprehensive course will be held at the National Hospital, Queen-square, the subjects including general neurology, the pathology of the nervous system, methods of examination and anatomy, and the physiology of the nervous system. Any part of the course may be taken separately. A series of demonstrations on the diagnosis and treatment of diseases of eye will be given at the Royal Eye Hospital between Oct. 24th and Nov. 5th. On Monday, Oct. 17th, at 5 P.M., at the rooms of the Medical Society of London, 11, Chandos-street, W., Sir Humphry Rolleston will give the first of a series of lectures entitled Practical Hints on Medicine, Surgery, and the Allied Specialties. His subject will be the Diagnosis and Treatment of some Endocrine Disorders. Copies of all syllabuses are obtainable from the Secretary of the Fellowship at 1, Wimpole-street, W. 1. The programmes will be sent regularly to those who express a wish to receive them.

THE POPULATION CONFERENCE.—A lecture on the recent conference at Geneva will be given to the Society for Constructive Birth Control and Racial Progress by Prof. Julian Huxley, at the Essex Hall, Essex-street, Strand, on Thursday, Oct. 20th, at 8 P.M.

BIOCHEMICAL SOCIETY.—A meeting of this Society will be held at the Biochemical Laboratory, Cambridge, to-morrow, Saturday, Oct. 8th, at 3 P.M. Among the communications to be read is one by G. S. Haynes and C. G. L. Wolf on the Interferometer Method for the Diagnosis of Pregnancy and Malignant Growths.

THE SEMON LECTURE.—Mr. Lionel Colledge will deliver the Semon Lecture in the Barnes Hall of the Royal Society of Medicine, 1, Wimpole-street, W., on Thursday, Nov. 3rd, at 5 P.M. His subject will be the Present Position of Laryngectomy for Cancer of the Larynx, and Mr. Harold Barwell will take the chair.

JEWISH HEALTH PROBLEMS.—Dr. Julius Brutzkus, ex-minister of the Lithuanian Government, will lecture in German on Jewish Health Problems in Eastern Europe, at the Jews' College, Guilford-street, London, W.C., on Sunday, Oct. 9th, at 4.30 P.M.

INSTITUTION OF HEATING AND VENTILATING ENGINEERS.—A meeting will be held at 12, Russell-square, London, W.C., on Tuesday, Oct. 11th, at 6.45 P.M., when Dr. J. S. Owens will speak on Atmospheric Pollution.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—The annual general meeting will be held on Friday, Oct. 14th, at 8.45 P.M., at the Miller General Hospital, Greenwich, S.E. Clinical cases will be shown by Mr. C. A. Joll, Dr. H. Nockolds, and Mr. P. B. Roth. Mr. H. P. Winsbury White will demonstrate a series of nephrectomy specimens.

BRITISH INSTITUTE OF PHILOSOPHICAL STUDIES.—The first of the evening meetings for the session 1927–28 will be held at the Royal Society of Arts, 18, John-street, Adelphi, W.C., on Tuesday, Oct. 11th, at 8.15 P.M., when Dr. John Rickman and Dr. H. G. Baynes will lecture on the Standpoints of Freud and Jung. A limited number of seats are reserved for members of the public who care to apply for tickets.

Medical Diary.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY, Oct. 10th.—5 P.M., WAR. Presidential Address: Surgeon Vice-Admiral A. Gaskell: Professional Opportunities of the Service Medical Officer.

TUESDAY.—5 P.M., THERAPEUTICS. Presidential Address: Prof. J. A. Gunn: Pharmacological Syndromes.

THURSDAY.—8.30 P.M., NEUROLOGY. Presidential Address: Prof. Edwin Bramwell: The Upward Movement of the Eyes; a Clinical Study of a Coördinated Movement.

FRIDAY.—5.30 P.M., CLINICAL. (Cases at 5 P.M.) Cases: Mr. P. Lockhart-Mummery: (1) and (2) Two Cases of Congenital Absence of the Anus Cured by Operation. Mr. C. E. Shattock: (3) Case of Dactylitis Syphilitica. Dr. F. Parkes Weber: (4) Congenital Jaundice in a Man, aged 60 years; (5) Gastric Achlorhydria in a Woman under Observation over 19 years ago for Grave Anæmia; (6) Thrombo-angiitis Obliterans (Buerger's Disease) on the Basis of Developmental Arterial Hypoplasia; (7) The Result of Omentopexy in a Man with Chronic Ascites from Hepatic Cirrhosis. Mr. A. E. Mortimer Woolf: (8) Case for Diagnosis. Dr. C. Worster-Drought: (9) Case of Acromegaly with Unilateral Paralysis of the Sixth and Seventh Cranial Nerves.—8.30 P.M., OPHTHALMOLOGY. (Cases at 8 P.M.) Cases: Mr. R. C. Davenport: Two Cases, in Mother and Son, of Congenital Macular Colobomata. Illustrations of coloboma of the optic disc and allied conditions will be shown on the epidiascope. Paper: Miss Ida C. Mann: The Process of Retinal Differentiation in Man.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY, Oct. 10th.—8 P.M., Annual General Meeting. 8.30 P.M., Presidential Address: Surgery in the Early Days of the Medical Society of London, by Herbert William Carson.

LECTURES, ADDRESSES, DEMONSTRATIONS &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, Oct. 10th, to SATURDAY, Oct. 15th.—FELLOWSHIP OF MEDICINE. CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd-street, W.C. Tues., special clinical demonstration at 4 P.M. by Mr. Mayou. Open to all members of the medical profession.—CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL, Gray's Inn-road, W.C. Clinical course, all day.—LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, Endsleigh-gardens, N.W.

Tues. and Thurs., clinical demonstration at 2 P.M., by Dr. Low and Dr. Manson-Bahr respectively.—ROYAL FREE HOSPITAL, Gray's Inn-road, W.C. Wed., 5.15 P.M., Dr. Heald: The Direct Current, with Special Reference to its Uses in Cases of Injury.—NATIONAL HOSPITAL, Queen-square, W.C. Special two months' course in Neurology. Further information from the Secretary. (Mayfair 2236.)

WEST LONDON HOSPITAL, POST-GRADUATE COLLEGE, Hammersmith, W.
MONDAY, Oct. 10th.—11 A.M., Mr. Tyrrell Gray: Surgical Wards. 2 P.M., Mr. Simmonds: Surgical Out-patients. Dr. Ironside: Medical Out-patients.
TUESDAY.—10 A.M., Medical Registrar: Ward Demonstration. 2 P.M., Mr. Sinclair: Surgical Out-patients. 4.30 P.M., Dr. Shaw: Bronchiectasis.
WEDNESDAY.—10 A.M., Dr. Owen: Medical Diseases of Children. 12 noon, Dr. Burnford: Medical Pathology.
THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Department. 2 P.M., Dr. Ironside: Medical Out-patients. 3 P.M., Sir H. Simson: Gynæcological Ward.
FRIDAY.—10 A.M., Dr. Dowling: Skin Department. 2 P.M., Mr. Addison: Operations; Mr. Sinclair: Surgical Out-patients.
SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy and Ward List. 10 A.M., Dr. Owen: Medical Diseases of Children.
Operations, Medical, Surgical, and Special Out-patients, daily 10 A.M. to 5 P.M.; Saturdays, 10 A.M. to 1 P.M.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY, Oct. 10th.—2.30 P.M. to 5 P.M., Medical, Surgical, and Gynæcological Clinics. Operations.
TUESDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose, and Ear Clinics. Operations.
WEDNESDAY.—2.30 P.M. to 5 P.M., Medical, Skin, and Eye Clinics. Operations.
THURSDAY.—11.30 A.M., Dental Clinic. 2.30 P.M. to 5 P.M., Medical, Surgical, and Ear, Nose, and Throat Clinics. Operations.
FRIDAY.—10.30 A.M., Throat, Nose, and Ear Clinics. 2.30 P.M. to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
TUESDAY, Oct. 11th.—5 P.M., Dr. S. E. Dore: Physiology of the Skin.
THURSDAY.—5 P.M., Dr. J. M. H. MacLeod: Morphology and Histopathology of Elementary Lesions.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
THURSDAY, Oct. 13th.—4 P.M., Dr. Cockayne: Disorders of the Thyroid.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.
TUESDAY, Oct. 11th.—4.15 P.M., Mr. W. R. Douglas: Chronic Inflammations of the Colon.
FRIDAY.—4.15 P.M., Dr. E. M. Brockbank: Dr. Thomas Percival (1740–1804) on the Health of the Cotton Operatives; Some of its Present Day Problems.

Appointments.

BARBER, HUGH, M.D. Lond., M.R.C.P. Lond., has been appointed Visiting and Consulting Physician to the Derby Poor-law Institution.
BROWN, HELEN S. H., M.B., Ch.B. Liverp., D.P.H., Medical Officer of Maternity and Child Welfare to the City of Lincoln.
CORFIELD, C. R., M.D. Brux., L.M.S.S.A., D.T.M. & H. Liverp., Senior Medical Officer, Sunderland Poor-law Institution.
DICK, R., M.B., Ch.B. Glasg., Resident House Surgeon, Batley and District Hospital, Yorkshire.
DODD, R. R., M.B., B.S. Durb., Assistant School Medical Officer, Newcastle.
Certifying Surgeons under the Factory and Workshop Acts: CAMERON, D., M.B., Ch.B. (Buckhaven, Fife); CLARKE, W. T., L.R.C.P. Lond., M.R.C.S. (Morley, W. Riding); FISHER, H. R., M.B., B.Ch. Liverp. (Menai Bridge, Anglesea)

Vacancies.

For further information refer to the advertisement columns.
Bethlem Hospital, Lambeth-road, S.E.—Res. H.P. £25 per quarter.
Birmingham and Midland Eye Hospital.—Res. Surg. O. £150.
Birmingham Cripples' Union and Royal Orthopædic and Spinal Hospital.—Sen. H.S. £400.
Birmingham, Dudley-road Hospital.—Three H.S.'s. Each at rate of £200.
Blackburn and East Lancashire Royal Infirmary.—Third H.S. £150.
Bootle Borough Hospital.—Hon. Surg.
Bradford Royal Infirmary.—One H.S. and one H.P. Each £150.
Bristol Royal Infirmary.—Sen. Res. M.O. £200.
Central London Throat, Nose, and Ear Hospital, Gray's Inn-road, W.C.—Hon. Asst. Out-patient Reg.
East London Hospital for Children and Disp. for Women, Shadwell, E.—H.P., H.S., and Cas. O. Each at rate of £125.
Folkestone, Royal Victoria Hospital.—Sen. and Jun. Res. M.O.'s. At rate of £150 and £100 respectively.
Gloucestershire Royal Infirmary, &c., Gloucester.—Res. Surg. O. and Asst. H.S. At rate of £175 and £120 respectively.
Hampstead General and North-West London Hospital, Haverstock-hill, N.W.—Cas. M.O., H.P. Also H.S. Each at rate of £100.
Hôpital Français, 172, Shaftesbury-avenue, W.C.—Jun. Res. M.O. £100.
Hospital for Consumption and Dis. of Chest, Brompton, S.W.—H.P. £50 for six months.
Hospital of St. John and St. Elizabeth, 40, Grove End-road, N.W. Res. H.S. At rate of £75.
Leeds City Sanatorium, Gateforth.—Res. M.O. £400.
London Jewish Hospital, Stepney Green, E.—Cas. O. £150.
London Temperance Hospital, Hampstead-road, N.W.—Clin. Asst., Ear, Nose and Throat Dept.
Maidstone, Kent County Ophthalmic and Aural Hospital.—Hon. Aural S.
Manchester Maternity and Child Welfare Centres.—Infant Clinic M.O. £600.
Metropolitan Ear, Nose and Throat Hospital, Fitzroy-square.—Anæsthetist.
Metropolitan Hospital, Kingsland-road, E.—Sen. H.P., Sen. H.S., Jun. H.P., Jun. H.S., and two Cas. O.'s. Each at rate of £100.
Miller General Hospital for South-East London, Greenwich-road, S.E.—Out-Patient Officer. £150.
Mount Vernon Hospital for Dis. of Chest, Northwood, Middlx.—Two Res. M.O.'s. At rate of £300 and £250 respectively.
Northampton General Hospital.—Asst. H.S. At rate of £150.
Norwich City.—Asst. M.O.H. and Sch. M.O. £600.
Norwich, Norfolk and Norwich Hospital.—H.P. and H.S. Each £120.
Nottingham, Bagthorpe Institution and Infirmary.—Res. Asst. M.O. At rate of £300.
Oswestry, Shropshire Orthopædic Hospital, &c.—Two H.S.'s. Each £200.
Ovamboland, South-West Africa.—Dist. S. £1000.
Oxford, Radcliffe Infirmary and County Hospital.—Hon. S., Hon. Asst. S., and Hon. Orthop. S.
Plymouth, South Devon and East Cornwall Hospital.—H.S. At rate of £50. Also Cas. H.S.
Queen's Hospital for Children, Hackney-road, E.—H.S. At rate of £100.
Royal Chest Hospital, City-road, E.C.—Res. M.O. Also H.P. At rate of £150 and £100 respectively.
Royal Free Hospital, Gray's Inn-road, W.C.—Obstet. and Gynæcological Unit, Sen. Asst., part-time. £350. Second Asst. £500. Third Asst. £270. Also Res. Asst. Pathologist. £150.
Royal National Orthopædic Hospital, 234, Great Portland-street, W.—Five Registrars. Each £100.
Royal Northern Hospital, Holloway, N.—Med. Reg. £100. Clin. Asst. in Ven. Dis. Dept. Clin. Asst. in Ophth. Dept.
St. George's Hospital, S.W.—Asst. Radiologist. £100.
St. Mark's Hospital for Cancer, City-road, E.C.—H.S. At rate of £75.
Sheffield Royal Hospital.—H.P. £80.
Swansea Hospital.—H.S. for Ophth. and Aural Depts. £150, £200.
Victoria Hospital for Children, Tite-street, Chelsea, S.W.—Hon. Med. Reg. and Hon. Surg. Reg. Also Hon. Out-patient Anæsthetist. 10s. 6d. per attendance.
Walsall General Hospital.—Sen. and Jun. H.S.'s. At rate of £200 and £125 respectively.
Warwick County Mental Hospital, Hatton.—Asst. M.O. £300.
Warwickshire and Corentry Joint Committee for Tuberculosis.—Asst. Tuberculosis O. £650.
West End Hospital for Nervous Diseases, Regent's Park, N.W.—Hon. Anæsthetist.
West Sussex County Council and Bognor Urban D.C.—Asst. County and Dist. M.O.H. £700.
A vacant appointment for a Certifying Factory Surgeon at Scalloway (County of Shetland) is announced.

Births, Marriages, and Deaths.

BIRTHS.

CHORLTON.—On Sept. 28th, at Buxton, the wife of Dr. J. S. Chorlton, of a daughter.
JEROME.—On Sept. 25th, at Sandhurst, Sutton Coldfield, the wife of John S. Jerome, *M.C.*, B.M., B.Ch. Oxf., of twin daughters.
ROWLEY.—On Oct. 1st, at a nursing home, Clifton, the wife of Dr. A. T. F. Rowley, Wrington, Somerset, of a daughter.
TELFER.—On Sept. 27th, the wife of Dr. A. C. D. Telfer, Howard-road, Walthamstow, London, E., of a daughter.

MARRIAGES.

WALKER—NIALL.—On Sept. 5th, at St. Michael's Church, Chatham, by the Rev. Father Ryan, Captain Cyril V. Walker, Army Dental Corps, son of the late Dr. C. E. Walker, of Hurworth, and Mrs. Walker, of Woodlands-terrace, Darlington, to Norah M. A. Niall, M.R.C.S. Eng., L.R.C.P. Lond., eldest daughter of Dr. and Mrs. W. G. Niall, Kinkora, New-road, Chatham.

DEATHS.

SANGSTER.—On Sept. 30th, Charles Sangster, M.R.C.S., L.R.C.P., late of Lambeth, aged 81.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

PLAN FOR AN INTERNATIONAL HOSPITAL CONGRESS.

AT the invitation of the American Hospital Association and of the League of Red Cross Societies representatives from 11 countries met on Sept. 19th in Paris, at the headquarters of the League, to discuss the advisability of calling an International Hospital Congress. The representatives of Great Britain were Mr. J. Courtney Buchanan, hon. secretary of the British Hospitals Association; Lieut.-Colonel Clement Cobbold, of the Gordon Hospital for Rectal Diseases, London; Mr. W. H. Harper, house governor of the Wolverhampton and Staffordshire Hospital; and Captain J. E. Stone, hon. secretary of the Incorporated Association of Hospital Officers. The preparatory work for the meeting had been carried out by Dr. E. H. Lewinski-Corwin, director of the Hospital Information and Service Bureau of the United Hospitals Fund of New York, and the delegates were welcomed by Dr. Joseph C. Doane, medical director of the Philadelphia General Hospital and president of the American Hospital Association. At the unanimous invitation of those present Dr. René Sand, technical counsellor to the League of Red Cross Societies, took the chair.

The delegates were unanimously in favour of holding an international hospital congress, and discussed the best time and place for it. Invitations were received from Groningen, Prague, and New York, and it was eventually agreed to accept the American invitation for the first congress. Several of those present expressed the opinion that it was impossible to organise a congress in less than two years, so the date was provisionally fixed for June, 1929. An international executive committee, consisting of two delegates from each participating country, is to be appointed for the general preparation of the congress, and Dr. Lewinski-Corwin will act as its general secretary. Those present were invited to organise national committees in their respective countries with a view to forwarding the aims of the congress.

It was decided that the problems to be discussed should be limited as far as possible to the following: (*a*) the founding of national hospital associations, and of an international hospital association; (*b*) the respective fields of public and private hospital work; (*c*) the hospital as a centre for cure and prevention of disease, medical education, and research; (*d*) the training of hospital executives, nurses, and auxiliary personnel; and (*e*) the economic problems of hospital administration. One session will be devoted to the discussion of such special problems as the care of the mentally ill and the comparability of hospital statistics. An international exhibition is to be arranged at the time of the congress, and visits will be paid to the hospitals of New York, Philadelphia, Baltimore, and Washington. Nurses were represented at the meeting by Miss Reimann, secretary to the International Council of Nurses, who expressed a wish that the date of the congress and that of the International Nurses' Congress, which is to meet in Montreal in 1929, might be so arranged as to facilitate attendance at both.

"H.M. BUG-CATCHER."

To the Editor of THE LANCET.

SIR,—In your issue of July 16th, p. 156, you express some surprise that a man holding a Royal Warrant of "Bug Catcher to His Majesty," should be mentioned in Boyle's Court Guide of 1837. Whether the Royal Warrant was continued in the reign of Queen Victoria I do not know for certain, but I do know that the person referred to, whose identification is easy, or his successor in an old-established firm of upholsterers and furniture cleaners, located in Great Marylebone-street, near Marylebone-lane, styled himself on a board or plate displayed in his shop window as "Bug Exterminator to the Royal Family." This was always to be seen in my younger days and perhaps is there still.

The same expert in hunting small game to whom you refer contributed an interesting article on the subject of *Cimex lectularius* to Mayhew's "London Labour and the London Poor," Vol. III. In this he not only recounts some of his professional exploits, including a visit to the palace to relieve Princess Charlotte of a parasite that had tormented her, but gives a very good account of the natural history of the insect, with useful details not readily to be obtained elsewhere. He states that it is supposed that bugs were first introduced into England after the Great Fire of London, in timber that was imported for the rebuilding of the city. His ancestor started his warfare against the pest soon after.—I am, Sir, yours faithfully,

F. LUCAS BENHAM, M.D., M.R.C.P.

Semaphore, South Australia, August 22nd, 1927.

EFFECT OF ULTRA-VIOLET LIGHT ON PLANTS.

IT is a common statement that ultra-violet light is evidently not needed for the healthy growth of plants because every variety of plant can easily be cultivated behind glass which is impervious to ultra-violet light. E. M. Delf [1] points out that this belief is incorrect; different kinds of glass differ in the degree to which they transmit ultra-violet light and all are not impervious to it; also many tropical and subtropical plants, grown in England under glass and with every precaution as to temperature and moisture, refuse to thrive as they would in their own country. Such experimental work as has previously been done has rather gone to show that ultra-violet light is actually harmful or even fatal to plants, and Delf mentions that previous workers found that a single long exposure of 2½ hours, or repeated shorter ones of even as little as 5 minutes a day, had a fatal or a severely stunting effect upon them. In her own experiments, she sought to ascertain whether in any circumstances dosage with ultra-violet light can be of benefit to greenhouse plants. She used a Hewittic quartz mercury-vapour arc and gave exposures of 30 seconds or longer. All doses which she used, from 10 minutes down to 1 minute, had a harmful effect, but when she used doses as small as 30 seconds on a number of successive days, a beneficial action was observed after a certain latent period. Though no more than suggestive this investigation affords an interesting analogy to work at a certain stage in the history of the irradiation of animals. Certain earlier workers exposed rats to ultra-violet light for lengthy periods and, in consequence, reported that the effect of the rays is wholly harmful. They entirely missed the extremely important biological action of small doses of the rays.

It would be interesting to know whether glass which transmits ultra-violet rays freely can be usefully employed to increase the growth of fruit and vegetables in greenhouses. It has been stated that an experiment with tomatoes showed that improvement was obtained with this kind of glass.

ULTRA-VIOLET LAMPS.

Messrs. Watson and Sons (Electro-Medical), Ltd., have recently issued an abridged catalogue giving illustrations of a selection of the various sources of ultra-violet radiation useful for therapeutic work. Their "Sunic" and "Kingsway" models appear to be of simple and workable design and are adapted for use with the mercury-vapour type of lamp; the former model is also available for use with the open tungsten arc. It is worth noticing that protective goggles for the eyes of operators are now made so that they reflect a large percentage of the heat received from open arc lamps; this is done by plating the glass with a transparent film of gold.

A BADLY-FITTING TRUSS.

To the Editor of THE LANCET.

SIR,—I have frequently suffered sickening and exhausting pain for the past seven years owing to the repeated failures of the many trusses which I have patiently worn for months at a time for my double scrotal hernia. I feel that I have sufficiently graduated in the school of suffering to ventilate my experiences, which are briefly the failure of the appliances provided to effect their object, caused apparently by the lack of coöperation between the surgeon and the mechanician, the latter of whom is often hardly more than a salesman.

I am told that there is no hospital for hernia; can this possibly be true in London? In all my inquiries I have never heard of a surgeon specialist in the mechanics of the truss, though, of course, I have heard of many surgeons who operate for hernia—an operation for which I am far too old. The general practitioner seems to know little or nothing of the mechanics of the truss.

When I go to the dentist he fits my denture, or rather gets it fitted, until I am comfortable. Is it too much to ask the surgeon to do the same with the truss which he orders for me? I am, Sir, yours faithfully,

Sept. 29th, 1927. SENEX.

[1] Brit. Jour. of Actinotherapy, 1927, ii., 106.

Sir George Newman is to open on Friday, Oct. 14th, a new isolation hospital which has just been completed at Southport at a cost of £80,000.

NEWCASTLE INFIRMARY APPEAL.—An appeal for £150,000 has been launched by the authorities of the Royal Victoria Infirmary, Newcastle. The immediate necessity for the appeal has been created by the fact that the lease of the adjoining buildings of the Ministry of Pensions Hospitals expires on March 31st, when they revert to the infirmary. There is a waiting-list of 2000 and 40 or 50 emergency beds have frequently to be made up, causing serious overcrowding.